

# Railway Age

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## THREE STEPS TO LOWER OPERATING COSTS

### FIRST

Scrap obsolete locomotives  
which are uneconomical to  
operate and maintain.

### SECOND

Replace with modern locomotives and provide for systematic replacement—renewing the inventory at least once every twenty years.

### THIRD

Use the new locomotives intensively to realize the greatest possible return before obsolescence robs them of their efficiency.

*It takes Modern Locomotives to make money these days!*

**THE BALDWIN LOCOMOTIVE WORKS**  
PHILADELPHIA

# Progress Out of the Depression

Progress out of the worst depression in history has been, still is and probably will continue to be subject to fluctuations of the volume of business, and, consequently, of business sentiment. As has been repeatedly shown in these columns, the trend of general business was upward in the last one-third of 1932, downward in the first quarter of 1933, upward again until near the end of July, downward during August, September and October, and upward from November, 1933, until almost the end of March, 1934. It experienced a setback in April. In March car loadings were 64 per cent of their average in that month in the five years 1925-1929, inclusive, or relatively the largest since October, 1931. In April they were only 61 per cent of the 1925-1929 average.

The recent small decline in general business reflected in these figures, and predictions by some forecasters of a further recession during the immediate future, have caused some decline of confidence among business men. Many business men are better thermometers than barometers, and register the present temperature of business rather than its prospects. Whatever may occur within the next few months, it is plain that for almost two years the prevailing trend of general business has been upward, and probably, unless important developments occur which there is now no reason for expecting, it will continue to be upward indefinitely. The improvement that has occurred almost throughout the world since the summer of 1932 has been very marked. This country being a part of the world, it cannot fail to be affected by the progress occurring in other countries, although improvement here has been less than in most other countries.

### Some Reasons for Optimism

Car loadings are relatively the best single measure of the total volume of production and commerce. In March they were relatively 33 per cent larger than when the bottom of the depression was reached in July and August, 1932, and again in March, 1933, and in April were still relatively about 25 per cent greater. These figures demonstrate a very substantial improvement in this country, which has occurred in spite of unusual obstacles. When the *Railway Age* began last summer to say that the economic policies being adopted by the administration would hinder, not stimulate, recovery, it expressed a view that was out of accord with that taken by the large majority of publications and business men that accepted these policies with optimism until actual recession became apparent last fall.

There are several reasons for being optimistic now

that did not exist until within recent months. Although there have been fluctuations, the power of the natural forces of recovery has been so great that improvement has continued in spite of the handicaps imposed by government policies. Net profits have succeeded net losses in most lines of business, and employment has increased, in consequence of which the purchasing power of most industries, as well as of their employees, has increased.

### Change in Attitude of Business Men

A great change in the sentiment of business men has occurred, as a result of which vigorous opposition to certain government policies has become widespread and vocal. There apparently was danger at one time of the establishment of such complete domination of industry by labor leaders that progress would be seriously hampered. This danger has been reduced by the courageous refusal of the automobile industry to submit to union labor dictation, and by the prevention of the passage of the Wagner Labor Board bill in its original form. The power of the government to coerce industry was impaired by the adverse public sentiment aroused by its arbitrary and unfair cancellation of the air mail contracts; and socialist-labor policies were given a severe setback by the determined opposition of business and industry, which forced the administration to abandon its program for another 10 per cent increase of wages and reduction of working hours. The attitude assumed by the Chamber of Commerce of the United States at its recent annual meeting showed that business generally has become aroused against policies designed by the brain trust to substitute government regimentation and financing for private initiative and financing, and that they will encounter in future a determined opposition from the real brains of the country which comparatively few politicians will care to face. Nothing could be more significant than recent addresses made by the chief brain truster, Dr. Tugwell, in which he has sought to show that he is really a "conservative." Such men do not try to show they are conservatives when so-called "liberalism," which is merely another word for radicalism, is still popular.

### Railway Earnings and Purchases

The improvement in conditions in the railroad industry is a significant cross-section of the improvement that has been occurring in business in general. The revival of the durable goods industries continues to be the most important problem of recovery. The rail-



way industry is one of the largest customers of these industries. The amount of net operating income earned by it determines the volume of its purchases from manufacturers, and, in fact, over periods of years, and almost year by year, they are about the same. In the five years ending with 1929 railway purchases from manufacturers were 8 per cent greater, and in the four years ending with 1933, were 3 per cent greater than railway net operating income. In the first three months of 1934 railway net operating income was \$112,277,000, or 225 per cent more than in the first quarter of 1933. This was 50 per cent less than the average net operating income earned in the first quarters of the five years 1925-1929, inclusive, but it was the largest amount earned in the first quarter of any year since 1930. The substantially increased railway buying in the first one-third of this year was done largely with money borrowed from the government, but experience indicates that continued increases of net operating income will cause a continuance of increased buying until railway properties have been rehabilitated and improvements have been made that are needed to better service and fully meet the competition of other carriers. Increases in net earnings that are occurring in numerous other industries will be used in much the same way to help revive business if artificial government and other methods are not adopted which interfere.

#### Increased Production Costs and Prices

The principal menace to the continuing revival of business is that production costs and prices may be advanced more rapidly than economic conditions warrant, with the effect of impairing the buying power and effective demand of both industries and individuals. That advances in wages increase costs of production, and that increased costs of production necessitate advances in prices, seems axiomatic, but increases in the total volume of production and commerce are the things needed fully to revive business, and general advances in prices are a very doubtful means of increasing the demand for commodities.

If, as some forecasters predict, there will be recession in business within the next few months, it will undoubtedly be due largely to increases in production costs and prices that are not economically warranted at this stage of recovery, and it will force individual concerns and entire industries to make readjustments essential to renewed progress toward recovery. Fortunately, natural economic forces usually are stronger than artificial measures adopted either by governments or trade associations, whether under codes or otherwise, and once recovery from a depression gets well under way it is almost as difficult to arrest it as to arrest the decline of business that causes a depression. Recovery from the present depression having got well under way within the last two years, it is reasonable to anticipate that, with occasional reverses, it will continue until the volume of production and commerce become larger than ever before and prosperity is fully restored.

## What Is the Value of the Locomotive-Mile?

In the summary of the report on locomotives prepared by Co-ordinator Eastman's Section of Car Pooling, which appeared in the April 28 issue, is a brief review of the carriers' estimate of the maximum locomotive mileage obtainable from the present locomotive inventory during a two-months' period of peak demand. Starting with the actual mileage made during August and September, 1933, which averaged 2,505,000 locomotive-miles daily, the carriers estimate that, by a more intensive utilization of the locomotives in active service during this period, by putting stored power to work and by the mileage obtained from worn-out power restored during a two-months' preliminary program of double-shift operation of repair facilities and a similar program continued through the peak period, an average daily performance of 5,017,000 locomotive-miles can be obtained for two months. This, the report points out, is 43.5 per cent greater than the daily average of 3,495,000 locomotive-miles per day during the peak month of October, 1929. "From these facts," says the report, "it is apparent that there is ample power if adequately maintained to protect any probable increase in traffic in the near future."

The conclusion as to the ability of the roads to meet any immediate increase in traffic is probably justified. But is it safe to assume, as the mileage comparison implies, that it is possible to handle a volume of traffic double that moved during August and September, 1933, with the present locomotive inventory? An analysis of the source of the additional locomotive miles by which the performance of August and September is to be doubled will answer that question and may also throw considerable light on the effect on operating efficiency were such a program of locomotive utilization actually attempted.

For the purpose of this study the 51,425 locomotives owned by the Class I railroads are classified in the report by types according to wheel arrangement. The present discussion will be confined to road locomotives, of which there are 42,622. The average daily performance of 2,505,000 locomotive-miles during August and September was made by 26,583 of these locomotives. By increasing the average miles per locomotive day for these same locomotives from 94.2 to 131.9, it is estimated that they can make 3,506,000 miles per day during the two-months' peak period. Withdrawing 4,640 locomotives from storage provides for another 534,000 locomotive-miles per day and repairing 9,604 locomotives, a further daily mileage of 977,000, which brings the total from all sources up to the daily average of 5,017,000 locomotive-miles—a general average of 122.9 miles per locomotive day.

Among the 13 types of locomotives, each numbering over one per cent of the total road locomotive inventory, are six types which, as a whole, are now obsolete. These are the 2-8-0, the 4-6-0, the 2-6-0, the 4-4-2, the



2-6-2, and the 4-4-0. The average age of these locomotives by types ranges from 25.9 years for the 2-8-0 to 34.2 years for the 4-4-0. There are 19,276 locomotives of these six types, 11,039 of which were in active service during August and September, producing an average daily mileage of 715,000. While these locomotives were 41.4 per cent of all active locomotives, they produced but 28.5 per cent of the locomotive mileage. By more intensive utilization it is estimated that they can produce 1,159,000 miles daily during the two-months' peak period, which is 33.1 per cent of the total mileage to be obtained from all the locomotives active during August and September. From the 2,606 stored locomotives of these six types—56.2 per cent of all stored locomotives—an additional 238,000 miles per day are to be obtained—44.6 per cent of the total mileage obtainable from stored power. Of the locomotives to be repaired 4,434, or 46.1 per cent, are of these six types and from them are to be obtained 327,000 locomotive-miles, or 33.5 per cent of the total daily average mileage to be secured from all repaired locomotives.

Considering all sources this group of 19,276 locomotives of obsolete types, which accounted for but 28.5 per cent of the average daily mileage during August and September, are to produce 1,724,000, or 34.4 per cent of the mileage obtainable during a 60-day peak period.

Such is the growing weight of obsolete motive power in the performance of the railroads as the demand for motive power increases. What influence may be expected from the completely modern motive power?

Of the 40 types according to wheel arrangement in which road locomotives are classified, 27 types, aggregating 2,108 locomotives, each constitutes less than one per cent of the total inventory. These are all dealt with in the report as a single group. With one exception (the 4-8-2 type), all of the types averaging less than ten years of age are included in this group. These are the 2-8-4, the 4-6-4, the 4-8-4 and the 2-10-4 types, of which there are 1,272 locomotives. During August and September, 1,533 of the 2,108 locomotives in this all-inclusive group averaged 226,674 miles per day. By an increase from 147.9 miles per day to 174.4 miles per day these same locomotives are considered capable of averaging a total daily mileage of 267,000. By withdrawing 198 of these locomotives from storage and repairing 348 of them additions of 21,000 and 60,000 miles, respectively, are provided, which makes the total contribution of this group to the two-months' peak period a daily average of 348,000 locomotive-miles. Its contribution has dropped from 9 per cent of the total mileage during August and September to 7 per cent of the total during the hypothetical period of peak performance.

The most numerous single type of locomotives in the inventory are the Consolidations—the 2-8-0 type—of which there are 11,266. During August and September, 6,681 locomotives of this type averaged 411,000 miles daily. By more intensive utilization these same locomotives are estimated to be capable of averaging

652,000 miles a day during the two-months' peak. By withdrawing 1,215 of this type from storage and by repairing 2,818 more of them, an additional 313,000 miles are to be secured from this group, which is in all to produce 965,000 miles of the five million daily peak. The Consolidation type locomotives are thus to contribute an increase of 134 per cent over their August and September service, whereas the group within which the most modern types of locomotives are included is to contribute an increase of but 53 per cent over its average daily performance in August and September.

It is evident that the most modern locomotives on the railroads, of which the supply is meagre, have been used so intensively that they can contribute little further as the demand for motive power increases. Without considering the economy of repairing over 4,000 locomotives of the six obsolete types, over 2,800 of which are Consolidations, what will be the effect on operating economy of an increase in locomotive-miles about equal to that actually made during August and September, of which over 40 per cent is obtained from locomotives of these six types and only 5 per cent is obtained from the group within which all of the most modern types are included?

## The "Design" of Track

Laymen often manifest impatience with the reports on research projects because they fail to set forth elemental facts in simple language. But this attitude is unjust because the ways of nature are devious, the scientist must state the facts as he finds them, and what may have seemed at the start a rather simple problem may prove exceedingly complex. No better illustration of this truth can be cited than the findings of the Joint Committee on Stresses in Track. Its work concerns a rather simple structure, yet investigation has disclosed so many variable influences as to remove all hope of the formulation of any rule of thumb code for the design of track for a given purpose.

In the face of this difficulty Dr. Talbot, who has directed this research project since its inception, has performed a highly valuable service by directing attention in semi-technical presentations to certain of the more elemental facts disclosed in the course of his work. Thus, in the lecture abstracted in this issue, he stresses a point not infrequently overlooked, namely, the futility of using rail of heavier sections as a substitute for a stronger track substructure, i.e., the ties, ballast and roadbed. The section of rail employed, as he points out, exerts an important influence on certain qualities of the track, but has little effect on the distribution of the wheel loads to the roadbed or on the amount that the track is depressed under load. Nothing that has developed as a result of this research work thus far, points so emphatically to the necessity for a greater application of the scientific method in the design of track.

# Research Shows Importance of Track Substructure\*

Studies made by the Committee on Stresses in Track indicate that stiffness of the rail support exerts more influence on the depression of the track under load than does the weight of the rail

By Dr. A. N. Talbot

Professor Emeritus, University of Illinois, Urbana, Ill., and Chairman of the Joint Committee on Stresses in Tracks

[One of the outstanding research projects conducted under the auspices of the railroads is the investigation of track, which has been carried out by the Joint Committee on Stresses in Track under the direction of Dr. Talbot for the last 20 years. During this time the committee has issued six progress reports that provide a great fund of factual material for the close student of the behavior of track under load. These reports appear as bulletins of the American Railway Engineering Association, but interest in the subject has been greatly expanded in recent years by means of illustrated lectures presented at the association's annual con-

ventions, in which Dr. Talbot has reviewed various elements of the committee's work in semi-popular form. Thus, in 1932, he discussed the behavior of rail joints and called attention to what he terms the variability of rail support, while in 1933, he reviewed the results of the committee's investigation of the effect of variations in bolt tension on the performance of joints. In the lecture which is abstracted here, he stresses the importance of the rail support, i.e., the ties, ballast and roadbed, from the standpoint of magnitude of the depression of the track under load.—Editor.]

\* Abstracted from an illustrated lecture presented before the American Railway Engineering Association on March 13.

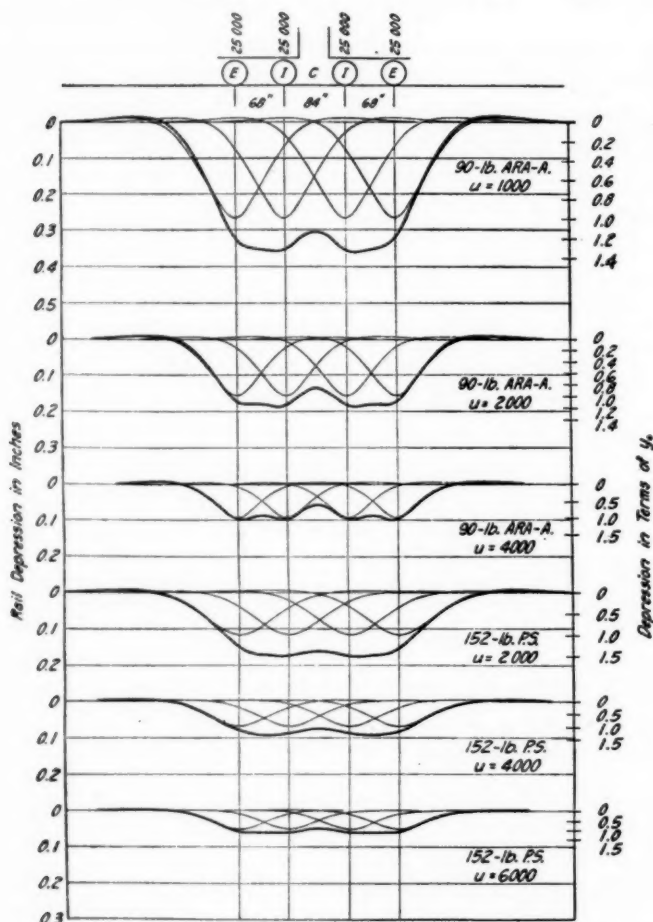


Fig. 1. Rail Depression Under the Trucks of Two Coupled Coal Cars, for Two Weights of Rail and Various Values of the Modulus of Elasticity of the Rail Support

In a study of stresses in track, too much emphasis cannot be placed on the relations between the size of rail, the stiffness of the substructure (the ties, ballast and roadbed), the depression of the rail all along its length, and the distribution of tie pressure reactions. For track with small irregularities of play between rail and tie, and between tie and ballast bed, the loads or pressures on individual ties for a given track are proportional to the depression or lowering of the rail under the wheel loads. In the reports of the Committee on Stresses in Track, the term "modulus of elasticity of rail support,  $u$ " has been used to express the relation between the magnitude of a load applied all along the rail and the magnitude of the resulting depression or vertical movement of the rail. In other words, it is a measure of the stiffness of the rail support or substructure below the rail.

## Some Fundamental Relationships

The analysis of track as an elastic structure (checked by tests) shows that the rail depression for a group of closely spaced wheels varies only slightly with the size of the rail, whether 90 or 130 lb. per yd. The depression under the main driving wheel, for example, comes very near to being inversely proportional to the modulus of elasticity of the rail support provided, regardless of the weight of the rail. The values for the other drivers are also nearly inversely proportional to this modulus. The weight on the drivers is evidently supported by about the same length of track, and the average depression of the rail along this length of wheel base does not vary greatly, regardless of rail stiffness and is nearly inversely proportional to the modulus. Consider a modulus of 1500, which is the approximate value of  $u$  for average track, and a modulus of 3000, which is the value for much stiffer track. The depression of the first track will be twice that of the second track, and the vertical movement of rail, tie and ballast will be double. Similar relations are found for the wheels of two trucks of two coupled cars, which is another condition involving high pressures as well as high stresses.

Since the intensity of rail pressure on a tie is pro-



portional to the rail depression and to the modulus  $u$ , it follows that the reaction or upward pressure against the rail at the main driver is nearly the same for any rail section and any rail-support stiffness. This, I think, has not usually been so accepted. Also, for other driving wheels than the main driver, the relation between intensity of pressure and rail section and the modulus  $u$  does not vary greatly from uniformity. In other words, the pressure of the rail on individual ties at or near the main driver (and to nearly the same extent at the other drivers) differs little for the several weights of rail and for the range of values of the modulus  $u$ . This fact may well be kept in mind in considering the loads coming on the ties and ballast.

Verification of these statements may be seen by reference to Fig. 1, which shows the vertical movement of the rail under the four wheels of two coupled cars on one rail. It will be found that the maximum tie pressure at a wheel of the two trucks of two coupled coal cars will not differ much for the different rails for different values of the modulus. For long trains of heavy cars the tie loads of these coupled trucks become an influential factor in producing deterioration of track surface. It may be expected, then, that the average tie pressure within a group of closely spaced wheels, whether for a locomotive or coupled cars, will not differ greatly through the usual range of rail weights and rail-support stiffness.

Assuming, then, that the average tie pressure throughout the length of a given group of wheels resulting from given wheel loads is approximately independent of the rail section, and, likewise, independent of the stiffness of the rail support, attention may be directed to the vertical movement of the rail support when this group of wheels moves along the track.

#### Effect of Up-and-Down Movement

The vertical movement of the rail (rail depression) at one of the four wheels of the trucks of two coupled cars, as the wheel loads are applied, may be taken at about 0.25 in. for a modulus of 1500, and 0.10 in. for a modulus of 4000. This means that the rail and the top of the tie will move downward, for the less stiff support, say,  $2\frac{1}{2}$  times as far as they do for the stiffer support. The downward movement within the ballast under the tie will have a somewhat similar ratio of movements. All the movements are followed by a corresponding rise when the wheels have moved on.

This up-and-down motion under the application and release of pressure to the tie every time a group of coupled trucks moves by (with approximately the same magnitude of tie pressure, whether the vertical movement be 0.25 in. or 0.10 in.) is a form of repetitive loading which, of course, has its effect on the stability of the structure and on the constancy and duration of good line and surface and on the ability of the ballast itself to continue fully to resist the load.

It is apparent that the effect of repetition will vary in some way with the magnitude of this vertical movement, and that the energy applied by a group of wheels will vary with the amount of the vertical movement. With 100 or 150 heavily loaded cars the repetitive up-and-down movement of the ties and ballast at every group of car wheels puts a repetitive loading of high magnitude on the track substructure.

#### The Value of Stiffness of the Substructure

All this has a bearing upon the value of increased stiffness in the tie-and-ballast substructure and upon the condition of the substructure. Although quantitative relations are not known, it is to be expected that the less stiff track (for example, that with a vertical move-



Fig. 2. The Concrete Roadbed on the Pere Marquette—Earlier Type in the Foreground—Later Type Beyond

ment of 0.25 in. as compared with 0.10 in.) will suffer deterioration with the passage of much less traffic, especially if the track is variable in condition from point to point and tie to tie. And of course the nature and depth of the ballast material and its consolidation and stiffness, as well as the quality of the tie structure, will largely determine the stiffness and depression of the substructure.

Such a finding is only a restatement of common knowledge, that a substantial substructure having deep, consolidated ballast on a solid roadbed will carry a much greater amount of traffic without maintenance work than will a less stiff substructure. It should be accepted that a stiff substructure has a real value in carrying heavy traffic. The quality of substructure should not be overlooked when we are talking about weight of rail and other track matters.

#### The Value of Heavier Rails

The greater stiffness of the heavier rail sections has frequently been considered of value as carrying the load farther ahead or behind the wheel and of decreasing the load on individual ties. However, as has been seen from the relative rail depressions, the greater stiffness of the heavier rail does not correspondingly affect the springiness or resilience of the track in taking sudden changes of load applied by defective rolling stock or by the abnormal dynamic augment of an imperfect counterbalance. It is primarily the stiffness of the substructure that governs the springiness of track under a group of wheels, although the stiffness of the rail will take a local part in the spring, particularly when the increased load is on only one wheel as with the dynamic augment of the main driving wheel. However, other advantages which come with the added stiffness of rail give value to the heavier section.

The greatest value of the heavier rail may be said to be the greater stability it gives to track. Stability implies the ability to maintain favorable conditions, to resist unusual or unexpected forces or loads, to overcome the variations. The greater stiffness of a heavier section aids in carrying loads over imperfectly tamped track and irregular supports; it resists lateral thrusts and lurches without undue distortion of alignment; it aids in maintaining proper surface. Even the added mass of the heavier rail gives an element of stability. The added stiffness should be considered a help in reducing the costs of maintenance.

It may be added that the value of the increased size



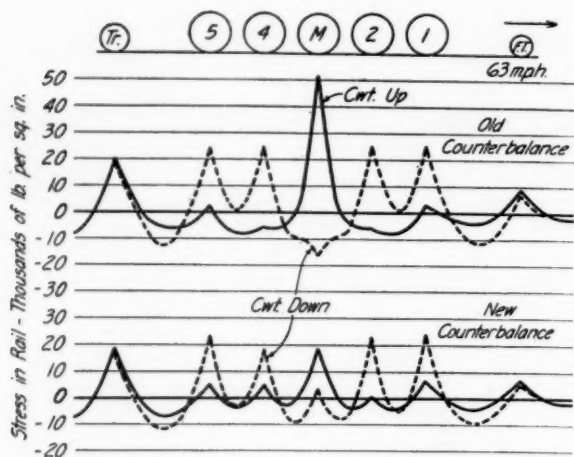


Fig. 3. Stresses in Rails Under Two Mikado Locomotives at 63 m.p.h., Showing the Effect of Improved Counterbalancing

of rail will depend upon many circumstances, among them the amount and nature of the traffic, the nature of the substructure, the wheel loads and speeds, and any economies involved in the situation. It can hardly be expected, however, that this value may be expressed quantitatively in formulas and equations, but studies of accompanying conditions should be helpful in forming a judgment.

#### The Pere Marquette Concrete Roadbed

Last fall a test was conducted on the concrete roadbed on the Pere Marquette at Beech, Mich., with a view of learning something of the action of this type of roadbed. This installation embodies two forms of construction. In the older one, built several years ago, the rail is supported on a rather thick slab of rectangular section. The newer one has a lighter base slab and two longitudinal ribs or supporting members continuous with the base, under each rail, with cross braces between these members. In the older stretch of track the rail is laid on a thin strip of insulating fiber which rests in a groove directly on the concrete. This strip is about  $\frac{1}{8}$ -in. thick and rather hard. For the newer form, the rail base rests on a  $\frac{7}{8}$ -in. creosoted pine board, and this rests in a shallow groove in the concrete. The general appearance is shown in Fig. 2.

In the test a static load was used, comprising a 30,000-lb. wheel load on each of the four wheels of one truck of a coal car. The concrete roadbed is in one track of a double-track line, and calculations of the effect of

the test load on the other track, which is good grade of ordinary ballasted construction, indicated a stress of 15,000 lb. per sq. in. in the base of the rail. In the newer stretch of the concrete roadbed, the average of the stresses in the base of the rail found at 78 spots was 6,800 lb. per sq. in., a little under half of that calculated for the tie-and-ballast track. On the older stretch of concrete roadbed, the average of the stresses in base of rail at 33 spots, was 3,800 lb. per sq. in., or about one-quarter of the calculated value for the tie-and-ballast track. The difference between the value of the stresses in the two stretches of concrete roadway is due principally to the greater compressibility of the wooden strip used as a rail support in the newer stretch over that of the thinner and harder strip in the older stretch.

It is of interest to note also, that variation in the stress from point to point in the rail supported on this concrete roadbed was less than in tie-and-ballast track. The board is a better support than the thin, hard insulating fiber. It takes up the variations and has some elastic action. As is to be expected, the slabs gave a good account of themselves. The depression of the slabs under the load averaged 0.06 in. for the newer slab and 0.04 in. for the older slab. In addition to the depression of the slab, the rail has a further depression which averaged 0.09 in. on the newer slab and 0.05 in. on the older slab, making 0.15 in. and 0.09 in. in all. This additional depression represents compression of the wood and the play between the rail and the supporting strip and the concrete. Variations in this play contributed to the variations in depression and stress found in the tests.

It may be remarked that the method of supporting the rail on the slab is of importance and to some extent is experimental. In these tests the results showed very fair uniformity of stress and depression and a much stiffer roadbed than the usual type of construction.

The counterbalancing of locomotive driving wheels continues to be of interest, and it seems well to present an example of what has been done to improve the counterbalancing of an old locomotive of a type that presented a rather difficult problem. This is shown by a comparison of the results of tests made more than 15 years ago on an old Santa Fe type locomotive, having small driving wheels (63 in. in diameter), with the results of recent tests on a locomotive similar in design that had been modified by equipping it with a new form of main driver, a double disc wheel, which permits the placing of a much heavier counterweight.

Figure 3 gives the stresses in the rail under the two locomotives. The upper diagram shows the stresses under the locomotive with the old counterbalancing. The counterweight on the main driver was very much smaller than what it should be, but as large as space permitted. The locomotive was far from being balanced. The lower diagram shows the stresses for a similar locomotive on another railroad, that was provided with new main driving wheels that afforded opportunity for adequate counterweights. The main drivers were also cross-counterbalanced. The application of these new counterweights, weighing 1,000 lb., had the effect of reducing the maximum stress in the rail. However, attention is called to another difference—the locomotive with the old counterbalancing had comparatively little counterbalance for the reciprocating parts, while in the other locomotive the counterbalancing follows the regulations of the Mechanical division, A. R. A., in counterbalancing for one-half of the weight of the reciprocating parts. This counterweight for reciprocating parts has been divided among the four drivers other than the main driver. It is a pertinent question, however, whether

(Continued on page 696)

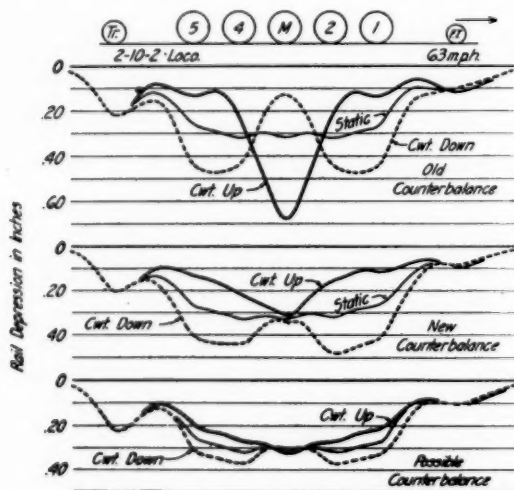


Fig. 4. Rail Depression Under the Two Mikado Locomotives Illustrated in Fig. 3

# The Future Possibilities of Diesel Motive Power

Now established for switching and rail-car service, engine builders are looking toward road service

THE Diesel engine as a source of railway motive power was the subject considered at the meeting of the Western Railway Club at Chicago on April 16. R. Tom Sawyer of the American Locomotive Company presented a paper in which he briefly surveyed the development of the Diesel engine and its application as a railway prime mover, with consideration of its future adaptability to passenger and freight service. Following the presentation of the paper representatives of other Diesel engine builders, in prepared discussions, expressed their confidence in the future extension of the field of usefulness of Diesel motive power in railway service.

## Paper by R. Tom Sawyer

An abstract of Mr. Sawyer's paper follows.

The first Diesel engine which was originated in Germany by Rudolf Diesel had the same fundamental principles that it has today; that is, it burned fuel oil and required no spark plug for ignition. The fuel oil is ignited by simply compressing the air to a very high temperature. A Diesel locomotive is a locomotive which contains one or more Diesel engines, power being transmitted electrically or otherwise to the driving wheels. The fuel oil universally used today is partially refined for this particular purpose and is similar to that burned in the oil furnaces in houses, being a higher grade than that used in oil-burning steam locomotives.

The overall thermal efficiency of the engine is between 20 and 35 per cent, depending upon the service and type, the thermal efficiency of a Diesel locomotive being considerably higher than any other practical type of locomotive known. Tests show that the Diesel locomotive will use only one fifth to one tenth as much fuel as an oil-burning steam locomotive in the same service.

Engines for automobiles, rail motor cars and Diesel locomotives are similar, the only difference being the fact that the Diesel engine burns fuel oil instead of gasoline and the fuel oil is injected directly into the cylinders instead of sucked up through the carburetor as gasoline is in a gasoline engine.

There is a very definite place for the Diesel locomotive in the railroad field. That place is primarily in switching and transfer service. The time may come, however, when it will replace the steam locomotive to a greater extent than now seems probable. There are close to 1,000 gasoline rail cars and over 100 Diesel locomotives in service in this country today.

A typical four-cycle Diesel engine weighs only 11 lb. per hp., including all auxiliaries.

## Types of Transmission for Diesel Locomotives

The question is often raised as to what type of transmission should be used in transmitting the power of the Diesel engine to the driving wheels. The electric drive has been universally adopted for heavy switching Diesel

locomotives, while the mechanical drive is generally used in the small industrial locomotives of 20 tons or less. In addition to electric transmission there are four other means of transmitting the power.

One type is a mechanical drive, similar to that of an automobile using a friction clutch and gear box. For small locomotives this transmission is satisfactory. Another type is the direct mechanical drive where the clutch and gear box are eliminated; that is, the Diesel engine is connected directly to the driving wheels. The first locomotive of this type was built in 1912 in Switzerland and proved unsatisfactory. Another locomotive is now in trial service in Germany. In both cases the locomotives are started by compressed air and, naturally, starting the locomotive means starting the Diesel engine together with the entire train. I mention this type of drive because it appears to be the simplest type to build and of interest to watch.

A third type is air transmission; that is, the Diesel is coupled directly to an air compressor which supplies air to drive the pistons in the cylinders placed on the locomotive in the same manner as steam cylinders on a steam locomotive. Up to date none of these locomotives has been successful. This is true also of the heavy duty locomotives using hydraulic transmission. Electric transmission is generally preferred today in this country, especially in heavy switching service where the locomotive is continuously starting and stopping. However, the Diesel has really not entered the field of pulling heavy fast freight trains, but when—and please note that I did not say if—that day comes there may be a question as to what type of transmission or arrangement of engine should then be used.

## Comparative Characteristics of Diesel-Electric and Steam Locomotives

The question is often asked "Why does the tractive force of a Diesel-electric locomotive drop so rapidly?" The answer is that the horsepower of the Diesel engine is constant regardless of the speed of the locomotive, due to the fact that the power is supplied through electric transmission. The cylinders of a steam locomotive are coupled directly to the driving wheels and for this reason the steam locomotive may have a small horsepower in starting but additional power is developed rapidly as the locomotive picks up speed. This is a fundamental fact which we must understand in order to appreciate the difference between a steam and a Diesel-electric locomotive. That is the reason why a Diesel locomotive which has only 600 hp. can do a better job in switching service than a steam locomotive which may have 2,000 hp. at 30 m.p.h., as in yard switching service the operating speed seldom exceeds 10 m.p.h. and within this speed the steam locomotive actually develops less horsepower than the Diesel locomotive.

Comparing the acceleration curves of a 75-ton steam locomotive and a 600-hp. Diesel locomotive (both suit-



able for switching service) handling a train of 1,000 tons, it is found that the Diesel locomotive gives an appreciably better performance up to 10 m.p.h. For example, it takes only 19 sec. for the Diesel locomotive to reach 6 m.p.h., while it takes 8 sec. longer for the steam locomotive to reach the same speed. However, the steam locomotive has a better performance above 10 m.p.h. and is, therefore, better suited for transfer and road service with this particular size of train.

### Operating Costs

If a Diesel locomotive can be placed in approximately 24-hr. switching service it will more than justify its higher first cost regardless of the type and size of steam locomotive replaced. However, if the Diesel locomotive is to be operated approximately only 16 hrs. a day the costs should be analyzed to determine whether steam or Diesel is most economical. Generally speaking, it has been found that the Diesel engine is justified if placed in 16-hr. service, 6 days a week and as many as 300 days per year.

Cost of repairs varies greatly even on steam locomotives in the same class of service on different roads, and, therefore, it is extremely difficult to state what the costs of repairs will be on Diesel locomotives on a certain road even though we know what their costs are on a neighboring road. It is fair to assume that the cost of repairs is equal to or less than the steam locomotive. It can be assumed that the miscellaneous expense of the Diesel locomotive is equal to the miscellaneous expense of the steam locomotive.

The cost of lubricating oil for a Diesel locomotive is greater than for a steam locomotive and, on the other hand, the water consumption on a Diesel is negligible. It is of interest to note that service data show the lubricating oil cost of a Diesel locomotive is generally equal to, or less than, the combined cost of lubricating oil and of water on the steam locomotive which it replaces.

Therefore, we have only three factors which vary appreciably. The cost of fuel on the Diesel locomotive is far less than the cost of fuel on the steam locomotive, whether it burns coal or oil. The cost of labor is considerably less on the Diesel locomotive, because there is not one Diesel locomotive in service in this country that uses a fireman. In a few cases a second man in addition to the engineer is used on the Diesel locomotive, but in no case is a fireman required. The third factor is engine-house expense. This expense covers two sub-factors: First, the overhead cost of the enginehouse and, second, the cost of work on the locomotive when it is in the enginehouse. The overhead cost cannot be changed, generally speaking, whether steam or Diesel locomotives, or both, are used, yet if the Diesel locomotive is kept in 24-hr. service six or seven days per week it seldom enters the enginehouse.

There are many incidental savings obtained by using Diesel locomotives which cannot be so directly accounted for. These savings are, however, real and include track maintenance to some extent, elimination of water and coaling facilities and elimination of double heading in certain cases where the high starting tractive force of the Diesel locomotive has an advantage over the steam locomotive. There is also, in some cases, a saving due to the fact that the Diesel locomotive can enter factories and warehouses where the steam locomotive is required to stay out and use reachers consisting of a string of cars to enter the building.

There is now a considerable amount of real operating data available as to the Diesel and, with service conditions specifically outline, accurate comparative costs of Diesel and steam locomotives can be made. The decision

as to whether the Diesel or steam locomotive is purchased should be based on an analysis of these comparative costs.

### Diesel Engines for Rail Motor Cars

There are today approximately 1,000 gasoline rail cars in service in this country and these have played an important part in the development of the Diesel locomotive. These rail cars have proved that there are at least some cases where more economical power than steam can be used. Although steam locomotives are generally employed, something else should be used when it is more economical. The rail car has also served to take away the mystery surrounding the internal-combustion engine and has taught the steam man how to operate and maintain internal-combustion engines in railroad service and, incidentally, has shown him their advantages and economical benefits.

The era of the single-unit rail car is passing; it was put in as a stop gap to reduce losses. The car and the branch over which it operated will in many cases be abandoned. Rail-car development is toward more capacity, more speed, and is leading up to the new high-speed articulated units operated with internal-combustion engines as the power. These new units, in a new field, are closing the gap between the branch-line rail car and the high-powered steam passenger locomotive. Just a word as to the power to be used by these units and the future higher powered rail cars, or locomotives. There can be, in the light of today's developments, but one forecast and that is that the Diesel engine will be used practically exclusively where steam does not continue to hold its preeminence.

### Multiple-Unit Diesel Trains Suggested

Many of you may not appreciate the fact that there was a day when competent engineers said that multiple-unit electric trains could not be operated successfully; that trains similar to the Chicago electric elevated lines as operating today were not practical. The first elevated trains in Chicago were pulled by steam locomotives, then by electric locomotives, and later, on the South Side Elevated, Frank Sprague first proved the practicability of his multiple-unit invention. A multiple-unit train is a train that has the driving power placed on each car, or on every other car as the case may be, and where the motors on all cars are controlled from either end by one master controller.

Multiple-unit electric car operation is now quite general, there being about 10,000 such cars in service today in this country. The traction motors are on individual cars, but all can be controlled from any car in the train. With this remote control the electric cars have real flexibility. Each car can be moved as an individual unit and the number of these individual units which can be coupled together in a train is practically unlimited.

The Diesel locomotive or rail car is operated from a control stand. There is no reason why a similar control stand cannot be in a distant car with small electric control wires in a jumper connection between the cars similar to the jumper connections on the electric multiple-unit trains. These small electric control wires running throughout the train would control the Diesel engines located on the individual cars from the control stand in the front car. This is practical and opens up an enormous field of possibilities. Such an arrangement, with suitable couplers, is used on Diesel-electric multiple-unit cars of the Netherland Railways.

We could take a single car, equip it with a Diesel power plant of say 400 hp., and with a suitable electric



transmission that car could be operated at, say, 80 m.p.h. between New York and Chicago. Now visualize 10 or more of these motor cars each with a trailer, coupled together in one train and all controlled electrically from the front car and you have a picture of future possibilities.

This arrangement would solve one great problem—a perplexing one which is confronting steam railroads today. The question is how large shall one Diesel power plant be to handle an entire train; shall it be 1,000 or 2,000 or even more horsepower? Would it not be much simpler from an operating standpoint to discard the one big Diesel power plant and place a small power plant on each car? Then it would make no difference whether there be six cars required in train No. 1 today or 16 cars in the same train tomorrow.

Rail cars or streamlined Diesel trains of today operate independently. However, Diesel multiple-unit cars must be built so as to be interchangeable and operate on any road; that is, a standardized air brake system should be used, as is now used on all passenger cars today; standard M. C. B. couplers; a standard control should be decided upon—a simple control—so cars manufactured by different companies can operate in the same train.

This is not a new idea, for it has been tried with gasoline engines. A good Diesel engine should require no personal attention when in operation. When this thought of using multiple-unit Diesel cars is given consideration one immediately realizes that a Diesel train of even 4,000 hp. is available today.

#### Freight Train Service

Although multiple-unit Diesel freight trains as a future possibility would open up an interesting discussion, I am not going into that field tonight. I simply wish to point out that multiple-unit Diesel freight trains are a practicable possibility. On electric interurban lines freight trains are not generally hauled by electric locomotives, but are handled by one or more freight cars equipped with electric traction motors. If these same cars were equipped with Diesel power plants they could be operated on any steam road. With but few exceptions the rail car in this country, until now, has been applied primarily to passenger service. However, in Germany there are a number of installations where the Diesel rail car is used exclusively for freight service. Here is a virgin field, a field to which practically no serious consideration has been given; that is, the application of the Diesel freight car.

The steam locomotive has been brought up to its present high standard only after a century of experience in actual service. The Diesel locomotive of today has passed through only nine years of actual service in this country. In 1925 many railroad men ridiculed the Diesel locomotive. Today, all thinking railroad men recognize that there is a legitimate, economical field for the Diesel; the only question is what are its limitations. It has come a long way in nine years and to my mind it is just well started.

#### Comments by W. L. Garrison\*

The specifications for the first Ingersoll-Rand Diesel engine for railroad application were drawn up 14 years ago. After 10 years service experience with 125 of these engines in various classes of switching, transfer and branch line service, operating records show that original requirements were correct both as to detail and order of importance. For railroad service these

specifications demanded positive requirements from the oil engine and their order of importance was and still is as follows: 1. Reliability. 2. Good balance. 3. Relatively high speed and low weight. 4. Accessibility with low maintenance. 5. Absence of noise and smoke. 6. Reasonable fuel economy. 7. Reasonable lubricating oil economy. 8. Reasonable first cost. If the Diesel engine is to justify its existence against the modern steam locomotive and continue to maintain its place in railroading, it must have reliability and low maintenance even though it costs more to build such an engine. Otherwise the Diesel locomotive cannot save enough in operating expenses to return a profit over its annual capital charges.

Consider the various demands made upon the locomotive oil engine. Experience has shown that the engine must meet successfully three different classes of service, each placing different demands upon the oil engine. These are: 1. Switching service. 2. Main line passenger or freight service. 3. Combination three-power locomotive service.

In switching service the oil engine operates 20-24 hours per day at variable speed. The engine is under almost constant acceleration and deceleration from no load idling to full load maximum speed, and must be capable of steady performance 6,000 to 7,000 hours per year. In this service the average load factor is low, from 12 to 25 per cent but the maximum power output may be demanded instantly and at frequent intervals.

The Diesel-electric rail car is characteristic of main line passenger service in which the engines operate from 12 to 17 hours daily at more nearly constant full load speed except for short intervals of coasting down grades or idling at station stops. The engines must be capable of sustaining full horsepower output over long periods, averaging as high as 70 to 85 per cent load factors if operating schedules are to be consistently maintained. For the past 15 months we have had a 600-hp. oil-electric rail motor car in revenue service on ten different railroads handling from one to five heavy trailers under all kinds of branch line, local and express service. Meter and time records of the engine and car performance have been kept from the start. The demands on the oil engines in this service are the same as those for large main line freight or passenger locomotives.

The so-called three-powered or oil-electric-battery combination locomotives are special both in service and in demands on the Diesel engine. Since the engine must supply electrical current for both the traction motors and charging the storage batteries, it must operate at constant full speed instead of variable speed under high load factors of from 50 to 60 per cent. Hours of service average from 5,000 to 7,000 per year although the engines get some respite since they may be shut down while the locomotives are operating on the third rail.

In addition to these service demands, railway Diesel engines must operate with no attendance and a limited supply of cooling water to dissipate the heat from cylinder heads and combustion chambers. Railroad service is far more exacting than either stationary or marine service.

Since locomotives and motor cars must have a reasonable weight for traction, safety and comfort, isn't it demanding too much of the Diesel power plant, which daily propels this equipment, to reduce its weight to a minimum, boost its rotative and piston speeds to a maximum and raise its mean effective pressure materially, expecting at the same time long life in continuous operation, reliability and low maintenance?

A Diesel engine for railroad application should be good for a useful life of 25 years at 6,000 to 7,000 operating hours per year. This represents approximately

\* Assistant manager, locomotive department, Ingersoll-Rand Company.

150,000 to 175,000 hours of operation which in itself is no mean task compared with that required of marine, automobile or aeroplane engines. An automobile engine may have a useful life of 150,000 miles. At an average car speed of 20 miles per hour, that is only 7,500 hours of actual operation or one year service in railroading.

## Comments by H. K. Smith

The Westinghouse Electric & Manufacturing Company has been interested in the development of Diesel engines for railway service for a number of years and has developed a standard line of four-cycle engines based on a 9-in. by 12-in. cylinder and an engine r.p.m. of 900. This gives 66 $\frac{2}{3}$  hp., from each cylinder, so we have in four-, six-, eight- and twelve-cylinder engines, 265, 400, 530 and 800 hp. With twin power plants of these sizes you can go up to 1,600 hp. We believe there will be few applications in the near future for locomotives of greater horsepower than this. For main line and some transfer service more horsepower will be required but this can be obtained without larger engines by multiple operation. Incidentally, all these engines use the same pistons, liners, fuel pumps, and many other parts.

Our experience has been that with 9-in. by 12-in. cylinders and 900-r.p.m., engines with sufficient weight can be obtained to meet the ruggedness so necessary for railway service and with dimensions and weights well within the limits required for rail-car service. The weight per brake horsepower is approximately 30 lb.

The Westinghouse Company has expended considerable time and money experimenting with two-cycle engines. As has been brought out, there are various two-cycle engines in service today, particularly of the lower speed stationary type. The question is, is it possible when everything is considered, to get a more economical engine with the two-cycle principle than with the four-cycle principle which has been so successful in railway service? A possible advantage for the two-cycle engine is in a streamlined train where the light weight and space limitations are severe. I believe the complete Diesel-electric power plant with a two-cycle engine will not be as efficient as with a four-cycle engine, and it is questionable whether the weight and space saved can be justified.

We have also done some work with super-charging, and this offers a fertile field for the development of greater capacity for a given piston displacement.

## Comments by E. F. Kultchar†

An argument regarding the merits of two- and four-cycle engines probably should have no place in a discussion of this paper, but this is necessary to avoid an incorrect impression. I believe it is generally recognized today that there is nothing inherent in either the two-cycle or four-cycle design which should condemn a Diesel engine for any job for which it is otherwise adapted. Either type, if a thoroughly-proven product, and if manufactured by a reputable company experienced in the Diesel engine field, may be depended upon.

The greatest advantage of the two-cycle engine is quite generally recognized to be its relative simplicity. As compared to the four-cycle, the two-cycle eliminates intake and exhaust valves and the rockers, push rods and cams required for operating them. For this valve mechanism which, under the high pressure and temperature conditions existing in a Diesel motor, must be maintained in

practically perfect condition and adjustment, there are substituted, on the two-cycle engine, ports in the cylinder walls which are uncovered by the piston and a low-pressure air blower or pump to maintain about 3 lb. pressure on the manifold which connects the air intake ports. Other engine parts are common to both types. Except for engines with small cylinders operating at high speed, say 1,000 r.p.m. or higher, in which the requirements for metering the fuel, i.e., governing, are at the present time beyond the possibility of such mechanism for two-cycle engines which have a much smaller fuel charge than four-cycle engines due to their being twice as many, there does not seem to be justification for the four-cycle engine except on one basis. That is, that a four-cycle engine with its positive displacement of exhaust gases by the piston and its rather conventional valve mechanism may be designed almost to formula, while this is not true of the two-cycle type. In contrast, the designing of a two-cycle engine, particularly with reference to ports, shape of combustion space, i.e., the top of the piston and under side of cylinder heads, and the fuel injection mechanism, must be developed experimentally and such development obviously requires a considerable period of time, together with proper facilities and a background of experience with such engines. However, when these details have been worked out so that good combustion results and so that an engine performs to the satisfaction of a reputable builder, the operator of the engine is relieved of the responsibility for maintaining the condition and adjustment of a mechanism which does not exist on the two-cycle engine, but which is vital to the proper functioning of a four-cycle engine.

The argument between advocates of two-cycle and four-cycle engines will undoubtedly continue for years to come. As evidence that this is true, within the past year, an important builder of Diesel engines in this country, who has never offered anything but four-cycle engines, brought out a line of two-cycle engines; and another large builder who has offered two-cycle Diesels exclusively, brought out a line of four-cycle.

## Comments by C. E. Beck\*

In 1930 Busch-Sulzer Bros. appropriated a quarter of a million dollars for railroad Diesel engine research and development work which has proceeded uninterruptedly for four years. It was necessary to approach the problem from two angles. First, we had to consider carefully what had already been developed and second, what we were best qualified to develop. Switching Diesel locomotives up to 800 or 900 hp. have been introduced successfully by several American builders having experience exclusively in the building of engines operating on the four-stroke cycle.

Our engineering experience embraced the building of both two- and four-cycle engines, our first two-cycle engine having been built more than 20 years ago.

Being fully cognizant, therefore, of the relative merits of the two- and four-stroke cycle engine, we accordingly attacked the problem of sufficient reduction in size and weight of the higher power two-cycle machine to meet the requirements of heavy switching, transfer, main line passenger and freight locomotives from 1,600 hp. to 3,500 hp. capacity. These sizes were selected with anticipation of lighter passenger trains with somewhat higher speeds. It is expected that 85 per cent of all future locomotives will not exceed 3,500 hp.

With the horsepower limitations determined, we at-

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† Fairbanks, Morse & Company.

\* Sales Engineer, Busch-Sulzer Bros.-Diesel Engine Company.



tempted to meet the following requirements: 1. Weight not to exceed 25 lb. per hp. 2. Rotative speeds around 550 to 600 r.p.m. 3. Reliability—assured by extreme simplicity, use of the best materials known, a minimum number of moving parts and elimination of the personal equation of the operator to a maximum degree.

Several designs were made and studied. Decision was reached, finally, to proceed with the Vee type, embracing such new features as the A. E. G. Hesselman mechanical injection fuel system, the positive-pressure, cycloidal scavenging blower of the Root type and electrically lighted sludge chambers where the pistons are under observation for 75 per cent of their working stroke. An eight-cylinder Vee type, two-cycle engine of 1,600 hp. has been completed and is now under test.

## Train-Limit Bill Opposed by Railroads

WASHINGTON, D. C.

**T**ESTIMONY to show that enactment of the train-limit bill advocated by the Railway Labor Executives' Association would make no contribution to the safety of operation but, on the contrary, would impose severe restrictions on railroad operation and add greatly to the hazard as well as to the cost by requiring additional train units, was presented on behalf of the railroads at a hearing on May 4 and 5 before a subcommittee of the Senate committee on interstate commerce on S. 2625, introduced by Senator Wheeler, of Montana. The effect on operation was discussed by J. W. Smith, vice-president and general manager of the Boston & Maine.

After outlining his experience of 14 years in train service followed by 20 years in official positions in the operating department, Mr. Smith said in part:

This bill does not state its definite purpose, whether it is with a view to additional safety, or increased employment. In so far as it applies to freight trains, I take it that the half-mile length is to cover our present-day equipment.

With these variations in the length of cars, making trains consisting of different numbers of cars and different lengths, it is not clear to me just what the proponents of this bill are endeavoring to accomplish. The difficulties that such restrictions would impose can be clearly seen. In the first instance we would be required to measure out a train much as a dry goods clerk does a piece of cloth.

If such a bill was enacted, it would impose very severe restrictions on train operations. If the railroads are to be prepared to offer reasonable and adequate train service, they must be elastic in their operations, capable and ready at all times to meet the normal and seasonal demands of commerce.

Railroad management is satisfied that a bill of this kind, limiting the movement of empty cars from 39, 49 or 70 cars to a train, if enacted, would result in a shortage of empties, or at least serious delay in furnishing them, which condition would seriously handicap the shipper.

Every locomotive is designed for the purpose of handling a certain amount of tonnage that will take care of the needs of the shipper, as well as make a schedule that will deliver shipments to destination in the quickest time possible. The train limit bill, as proposed, makes it impossible to do this.

Our government, through the Public Works Administration, has been urging all of us to borrow money for the purpose of making expenditures for rail, new locomotives, passenger and freight cars, and the railroad I am connected with has promised the government that it would purchase ten. The engines that we recommended are engines of a larger capacity than needed if this bill is enacted. About a week ago we were requested by a representative of the Public Works Administration to make a special effort to complete our negotiations for this purchase. I have said to our management that as long as this bill is pending before a national legislative body, I do not see how we can reach any decision whatever as to the type of locomotive that

should be bought and that we should so advise the Public Works Administration.

The enactment of this bill would vastly increase the cost of operation, and require enormous expenditures for new equipment and facilities. Operating costs would be increased by the greater number of trains required to move the same amount of traffic. The operation of more trains would necessitate a greater number of meeting points, yard handlings, etc., which would result in delays which are expensive. Large expenditures of money would be required for new locomotives, as the present locomotives on which huge sums have been expended, would, of necessity, have to be scrapped, as unless these modern engines can be operated somewhere near their capacity, the waste of fuel and cost of maintenance would be so great as to prohibit their use, and would result in the resurrection of obsolete small power for the handling of the proposed small units and also the purchase of additional engines. Further, the operation of these additional trains would so increase the density of traffic as to require the expenditure of millions for changes in yards, main tracks, passing tracks, signal protection, larger engine terminal facilities and locomotive repair shops.

In regard to passenger service—as previously stated, this bill limits passenger trains to 14 cars. Such restrictions would materially interfere with the convenience of the traveling public, as well as those dependent upon express service and milk supply for communities. The railroads are now in position to handle one or more extra cars with regular passenger train assignments, but under the bill there would be many cases where they could not take care of the business without an additional car, which, with the 14-car limit, they would not be able to add, and surely it would not be reasonable to expect the railroads to run a second train for an additional car or two. From our practical experience we can conceive of no unsafe condition to the traveling public, or to the employees, with any passenger, express or milk train consisting of over 14 cars, and it is our opinion that a gross injustice would be done the public to deprive them of such service.

There has been much said by the proponents as to the safety and operation of long trains. There has been a substantial reduction in accidents to the public and employees. Never before has freight been transported with such dispatch and safety, and with as much satisfaction to the shipper as is being done today. For several years there has been a gradual decrease in amounts paid for loss and damage to freight. The amount of money paid by Class I railroads for clearing wrecks in 1920 was \$20,887,933, while in 1932 but \$1,923,241 was paid, a decrease of 91 per cent, while the decrease in freight car miles, 1932 compared with 1920, was but 24 per cent.

If the long train operation, which is indulged in by all railroads, except in one state in the Union, is so unsafe, how can the improvement in safety to the public and employees, in giving expedited service, and in reducing the amount of money paid for damage to freight and clearing derailments and collisions be accounted for?

It seems strange, after all the years our railroads have been operating, and especially so after vast sums of money have been spent for improved automatic block signalling, automatic train control installations, improved locomotive and car equipment, etc., that there should be any necessity now for the enactment of any legislation that will increase the operating cost, and without a particle of improvement in safety of operation to either the public or the employees. It is most unfortunate that the railroad Managements and employees must spend their time and money for even considering such a measure, particularly in view of the financial condition of the railroads today.

For over twenty-five years the railroads have successfully defended their position with a majority of the states in the Union, proving to commissions and legislative bodies that additional men beyond what they now employ for the manning of trains, and restrictions as to the number of cars to be handled in a train, fail in their objective, insofar as safety of operation is concerned. In the years 1923 to 1933, inclusive, there have been 77 train limit bills introduced in 31 different states, and of these bills, not a single one was passed.

W. L. White, president of the American Short Line Railroad Association, said that, although the proponents of the bill are urging its enactment upon the hypothesis that it is a safety measure, "we think it has been demonstrated by the facts presented on behalf of the Class I carriers that it cannot be considered as such. Certainly, there is no conclusive showing that the reduction in the length of trains would increase safety in their operation. It must be quite obvious to you that this legislation is but an artifice to increase the number of trainmen employed by the railroads.

"To shorten the length of trains by setting a maximum



limit to their length can only result in increasing the operating expenses of many of the roads beyond the point that can be financially withstood. The result will ultimately be a decrease in railroad employment. Our member lines operating trains beyond the limit specified in this bill report to us that they have never had an accident that could be attributed to the length of the train. We believe this legislation to be ill-advised and unnecessary, and are opposed to it."

## Widespread Demand for Truck and Water Regulation

WASHINGTON, D. C.

THE widespread extent of the demand for regulation of highway and water transportation, among various interests, including many of the truck and water carriers themselves, was pointed out in Co-ordinator Eastman's second report to the President and Congress, dated March 10, in which he recommended legislation to bring these carriers under the jurisdiction of the Interstate Commerce Commission. The report has now been printed as a Senate Document, No. 152, together with appendices not made public with the mimeographed copies, including tabulations of the replies received to the various questionnaires used by the Co-ordinator to sound out opinion on the subject.

A brief summary of views on federal regulation of motor carriers was presented in the main body of the report. In the appendix a more complete summary of various and conflicting viewpoints on this question and on the related question of the auspices under which co-ordination should be effected is given, with illustrative extracts taken for the most part from briefs and statements filed with the Co-ordinator in response to his general press release of November 4, 1933.

The following table shows the views of various groups on the first of these questions.

Views of Respondents to Co-ordinator's Inquiry as to Regulation of Interstate Motor Carriers

Group	Should interstate business and/or trucks be regulated by the Federal Government?		In the event of such Federal legislation, what matters and types of carriers (common, contract, or private operators transporting own goods) should it embrace?				Favor complete regulation of common and contract carriers <sup>1</sup>	Miscellaneous suggestions <sup>2</sup>
	Yes	No	Common	Contract	Private			
Shippers (mostly corporations).....	156	15	146	131	22	33	12	
Individuals, including lawyers, professors, engineers, etc.....	54	1	47	43	13	16	2	
Chambers of commerce.....	65	3	65	59	12	20	5	
Rail carriers and association of railway executives.....	7	0	7	7	2	3	0	
State utility or corporation commissions.....	4	1	4	4	3	0	1	
Trade associations.....	25	3	22	22	7	6	2	
Truck and bus operators and motor associations <sup>3</sup> .....	25	6	25	22	9	11	6	
Taxpayers' associations and railroad employees.....	6	0	5	5	0	4	0	
Traffic organizations and freight bureaus.....	15	1	15	14	2	6	2	
Unclassified.....	10	4	11	9	2	2	1	
Total.....	367	34	347	316	72	101	31	

<sup>1</sup>Includes those who favor regulation along the same lines and to the same extent, so far as practicable, as rail carriers are regulated, and those who state that they should be regulated as to service and rates, or answers similar thereto.

<sup>2</sup>Includes those who favor regulation only as to safety requirements, or only as to rates for co-ordination purposes.

<sup>3</sup>21 of the affirmative replies are from local cartage companies and 4 from associations of motor operators or similar organizations.

The Co-ordinator's press release of November 4, 1933, raised the question whether co-ordination should be

achieved solely under railroad auspices or be effected through the co-operation of rail with independent motor, water, or air operators, as through mandatory joint rates. A summary of the well-considered responses follows:

	Yes	No
Should co-ordination be effected under railroad auspices?.....	118	26
Should co-ordination be achieved through mandatory joint rates?.....	78	9
Should co-ordination be effected on a purely voluntary basis?.....	119	6

Of the affirmative replies, 37 per cent favored co-ordination under railroad auspices. Of the 144 responses on this method of co-ordination, 82 per cent were in the affirmative. This ratio was approximately 85 per cent with respect to rail-motor co-ordination and 77 per cent with respect to rail-water co-ordination.

Of the 220 water carriers who responded to an inquiry concerning the need for further Federal regulation, 67 expressed themselves as being in favor of such regulation, 5 favored it with certain qualifications, 52 were opposed, and 96 took no position on the matter. Most of the contract carriers who made reply, particularly those on the Great Lakes, are opposed to regulation. The distribution of the responses is shown in the accompanying table.

Position of Water Carriers on Effective Federal Regulation

Group	Favor	Favor, with qualifications	Oppose	Noreply	Total
Atlantic Coastwise, Common Carrier.....	7	3	1	..	11
Atlantic-Gulf.....	5	..	..	2	7
Atlantic-Gulf Coastwise, contract and private.....	3	1	6	7	17
Atlantic Coast Inland.....	11	..	3	17	31
Gulf Coastwise.....	1	..	..	2	3
Gulf Pacific Intercoastal.....	2	..	..	..	2
United States Intercoastal.....	10	..	..	4	14
Inland water lines, Mississippi system.....	4	..	4	10	18
Great Lakes-New York State Barge Canal.....	1	..	1	1	3
Great Lakes, common carrier.....	10	1	2	6	19
Great Lakes, contract carrier.....	1	..	13	7	21
Great Lakes, private carrier.....	..	..	13	10	23
Pacific Coastwise, common carrier.....	4	..	..	6	10
Pacific-Alaska.....	1	..	1	1	3
Puget Sound, common carrier.....	2	..	3	4	9
Pacific Coast, contract and private.....	1	..	2	10	13
Pacific Coast, Inland California, common carrier.....	1	..	1	9	11
Pacific Coast, Inland Oregon district.....	3	..	2	..	5
Total.....	67	5	52	96	220

Traffic managers of representative industries of generally larger than average size, whose reasons for using water transportation and views as to whether or not there is need for water-carrier regulation were solicited, in a great preponderance of the cases took a position in favor of effective regulation. A summary follows:

Question	Number of answers		
	Yes	No	No answer
Does excessive competition affect the value and stability of water-transportation service?.....	224	80	232
Are uniform and definite rates for water-line service and publication of all rates on reasonable advance notice desirable?.....	378	41	117
Are stabilization of competitive practices of, and a closer approach to parity of competition between, the various agencies of transportation, but with due consideration of the economic factors surrounding each agency, desirable?.....	297	74	165
Is co-ordination of all agencies of domestic transportation desirable?.....	312	76	145
Is governmental regulation of domestic water lines desirable?.....	356	99	81

Similarly, 298 of a total of 338 respondents to the Co-ordinator's press release of November 4, 1933, who expressed themselves on the question of comprehensive regulation of domestic water lines favored such regulation, while only 40 took the contrary position.

WITH NEWSPAPER ADVERTISEMENTS captioned "Travel by Train—and Relax" the Victorian (Australia) Railways have recently been making a bid for the patronage of travelers who have been using the highway. The advertisements continue to the development of the foregoing text by stressing the safety and comfort of rail travel as compared with the tension and hazard attendant upon automobile driving. They close with the assurance that travelers will find "Travel by Train—and Relax" more than a slogan since "It is common sense."

# Revision of W. T. L. Class Rates

I. C. C. examiners propose readjustment to enable roads  
to meet truck competition

WASHINGTON, D. C.

**A** REVISION of the class-rate readjustment for western trunk line territory, which was prescribed by the Interstate Commerce Commission in 1930 after several years of proceedings, and which became effective on December 3, 1931, is recommended by Examiners W. J. Koebel and C. M. Bardwell in a proposed supplemental report upon further hearing, on the ground that the increased revenues yielded have been far less than were anticipated and that the carriers are now entitled to an opportunity for higher earnings from this traffic.

In the light of the increased development of truck competition since the period on which the commission's report was based, the readjustment now proposed includes some reductions in rates for the shorter hauls designed to regain some traffic for the railroads and some moderate increases, less than were asked by the railroads, in rates for the longer hauls that are less susceptible to truck competition.

The case in various forms has been before the commission since 1925. When the report was issued in July, 1930, an estimate was made in a press notice that the new adjustment would produce ten or twelve millions a year in increased revenue, if applied as expected, but a traffic test made in 1932 indicated, according to the testimony on rehearing, a net increase of only about a million dollars. On petitions filed by the railroads the proceeding was re-opened on October 28, 1932.

In their petitions the respondents declared that this readjustment failed to grant them the revenues to which they believed themselves entitled upon the original record, or even the relief which they think the commission obviously contemplated granting; that since the original record closed in May, 1928, their revenue needs had become even more acute; that the w.t.l. intraterritorial rates prescribed for the longer distances, in excess of 500 miles, were unduly and unwarrantedly low and should be restored to approximately their former levels; and that the rates prescribed between w.t.l. and official territories represented reductions from the former combination basis so severe as to be a positive injury to respondents. Claims made in their petitions were supported by the revenue results obtained from a test made of traffic moved in 1932 subsequent to the readjustment.

## Railroad Criticisms of Present Adjustment

The distance scales were criticised for what respondents termed the exaggerated decline in the rates of progression as distance increases. The zone I scale, for example, progresses 36 cents for the first 100 miles, 24 cents for the second, 18 cents for the third, 16 cents per 100 miles from 300 to 700 miles, and 12 cents beyond. They contended that there is no warrant for such a progressive decline in the gradation of rates. From New York to Fargo, N. Dak., for instance, the combination of the class 1 rates based on the Twin Cities is \$3.24. The through rate prescribed is \$2.54, or 78.4 per cent of the combination. Similarly, the through rate Chicago to Fargo is 73.5 per cent of the Minneapolis combination, the through rate Chicago to Denver, Colo., is 75.8 per cent of the Omaha, Nebr., combination, and the through rate New York to Minneapolis is 76.3 per cent of the

Chicago combination. It was respondents' contention that through rates so far below the combination of intermediates are not justified by any element of operating savings to them and give unwarranted competitive advantages to long-haul shippers.

Carriers serving mountain-Pacific territory assailed the w.t.l. adjustment because of its alleged tendency to break down the rate structure to, from, and within that territory and particularly the portion thereof known as intermountain territory. They cited a number of cases indicating that the commission has recognized that light traffic density and difficult operating conditions in mountain-Pacific territory warrant a higher rate level than in w.t.l. territory.

The figures of the traffic test, show that within w.t.l. territory and between that territory and Illinois territory the rate readjustment under review, together with the changes concurrently made in intrastate rates, resulted during the first full year after their establishment in a net increase in revenue of nearly two and three-quarters million dollars. If the interstate level had been established in each w.t.l. state on intrastate traffic, the increase would have been more than four and one-half million dollars. As to traffic between w.t.l. territory and official territory east of Illinois, on the contrary, a decrease in revenue is shown of one and two-thirds million dollars. This leaves a net increase on all traffic of more than one million dollars. If the intrastate rates in all states had been put on the interstate level, the net increase would have been nearly three million dollars.

## I. C. C. Estimate Based on 1926

On brief respondents called attention to the press notice issued concurrently with the release of the original report, roughly estimating that if the new rate adjustment were applied intra and interterritorially, intra and interstate, it would produce ten or twelve million dollars increased revenue per year for w.t.l. railroads. This they contrasted with the results indicated by the traffic test. As to this the examiners say: "Various causes have contributed to this discrepancy. It has already been shown that the new rate adjustment did not become effective universally on intrastate traffic. Moreover, the volume of traffic in 1932 was much less than that which formed the basis of the 1930 estimate. In making that estimate the commission had before it the traffic test of 1926 described in the original report.

In order to ascertain the probable results of this rate revision as applied to the 1926 traffic, respondents computed as to class-rate traffic the percentages of increase and decrease shown by the 1932 test which they then applied to the revenue figures of 1926 for the respective classes and areas. That computation showed that on class rate traffic within w.t.l. territory and between that territory and Illinois territory, assuming the interstate basis to have applied to all intrastate traffic, the result would have been a net increase of approximately eleven and one-half million dollars."

Relying on the evidence as to their financial needs, and on the revenue results of the prescribed rates indicated by the traffic test, respondents at the further



hearings proposed comprehensive changes in the rate structure, designed to produce materially increased revenues. Within w.t.l. territory and between that territory and Illinois no change was proposed in the distance scales for the respective zones prescribed by the commission for distances up to 500 miles. Beyond 500 miles, it was proposed to revise the scales upward. Between the zones the revised scales would be applied in accordance with the w.t.l. formula. Following are some extracts from the examiners' conclusions:

### Examiners' Conclusions

**Respondents' need for increased revenues.**—This further record fully sustains respondents' claim of need for increases in their net revenues from all traffic. It is obvious that the financial condition of the w.t.l. carriers has not improved since the original decision, but that on the contrary their operations have failed by ascending amounts to yield a fair return. It is equally obvious that the difference cannot be made up alone from the class-rate and related traffic herein under consideration, which represents only a small fraction of respondents' total tonnage. However, within the bounds of reasonableness, and taking into account the lawful interests of the shipping public, this traffic should contribute as much as possible toward that end.

The results of the 1932 traffic test as portrayed by respondents cannot be accepted at their full face value, but they do definitely demonstrate that the increases yielded by the readjustment under review are not as great as anticipated. A variety of causes has brought this about, chief among them being the depression in business and inroads of trucks with the consequent losses in railroad tonnage, reduced rates compelled by truck competition, and intrastate rate levels lower than interstate.

Another indication of the traffic test is that, due to the heavy reductions prescribed in the long-haul interterritorial rates, a greater reduction than probably necessary or warranted has occurred in the revenues on traffic between w.t.l. territory and official territory east of Illinois, which represents approximately 45 per cent of the total revenues covered. And it would appear that a partial reason for the comparatively small increases on traffic moving intraterritorially within w.t.l. territory, and between w.t.l. and Illinois territories, was the drastic reductions in the long-haul rates, more especially to and from zone III and subzone III, although the test figures are not so segregated that this may be stated positively.

In developing the rate scales and bases herein recommended an effort was made to produce revenue increases as great as believed possible on interstate traffic, giving thorough consideration to all pertinent factors. As will be shown later, those factors include truck operations, what the traffic will bear, and the proper relation of one rate zone or territory with another.

No comment is made on the intrastate rate situations because interstate rates only are under review in this reopening. However, intrastate rates are still a phase of these proceedings.

Respondents propose a sharp departure from the customary plan for constructing rate scales followed in the original report. They seek no change in the scales for 500 miles and less, but beyond they propose drastic increases in the rate of progression per 100 miles. In the zone III scale, for example, the progression would be at the rate of 30 cents per 100 miles from 500 to 800 miles, and 24 cents beyond, whereas the progression from 200 to 500 miles would remain only 19 or 20 cents. In other words, the spreads in their scale for the 300 miles immediately below and above 500 miles would be 59 and 90 cents, respectively. Under the customary plan any change in the progression is downward, that in the scale originally prescribed being 19 or 20 cents from 200 to 700 miles, and 14 or 15 cents beyond.

In justification respondents' traffic officials testified to the effect that the present scales below 500 miles afford reasonable rates, although they must often publish lower rates in order to compete with motor trucks; however, for hauls longer than 500 miles truck competition is not so prevalent, so that they can safely increase those rates and still hold the traffic to the rails. They vigorously contended that the commission may not give any consideration to truck competition in deciding upon reasonable rail rates. They claim that this is a matter within the domain of respondents' managerial discretion after the commission has exercised its function of prescribing maximum reasonable rates for rail transportation. In this connection reference is repeatedly made to the commission's expression that "Under present conditions, motor-truck competition is primarily the railroads' problem, and they apparently so regard it," but conditions have changed vastly in this field since the original record closed in May, 1928.

Respondents' position is untenable. Truck operations merely

present another element to be given consideration and due weight in arriving at appropriate distance scales. While this element enters in some degree the deliberations upon scale construction, its greatest force is, of course, upon the measure of the scales.

We think that the scale construction proposed by respondents is unsound. Admittedly they cannot move a fair proportion of the traffic at the present rates for the shorter distances, in which they urge no change be made; undoubtedly the abnormal "boost" they propose in their scales from 500 to 800 miles and somewhat less marked beyond, would cause revenue losses because of further diversion to the trucks; and rate relations between points above and below 500 miles would be seriously disrupted. The latter consequence would be especially severe in this case because the distances between the most important points within zone I and Illinois territory fall within 500 miles and would be unaffected, whereas those at greater distances and competing with the former would suffer substantial rate increases.

We believe that the commission should adhere to the customary plan of rate-scale construction, altered only to fit the conditions developed on this record. Foremost is the susceptibility of class-rate traffic to movement by truck, and the enormous diversion which has already taken place. This dictates scale construction relatively low for the shorter distances, and relatively high for the longer distances but guarding against prohibitive rates. But from a practical standpoint, scales for w.t.l. zones cannot well start as low as the *Eastern case* scale, and the basic scale for the determination of interterritorial distance rates cannot be lower than the latter for any distance block. No change in the present arrangement of distance blocks appears necessary or desirable.

The further hearings developed two outstanding matters deserving attention: First, the need of respondents, particularly those operating in w.t.l. territory, for increased revenues; and second, the desirability of a rate relation as close as possible of w.t.l. territory, especially of zone I, with official-Illinois territories. Both matters must be approached with caution, for action in the direction of one must be to some extent at the expense of the other. Furthermore, truck operations must be recognized as having an important influence upon the measure of rates for the movement of class-rate traffic, and precludes drastic increases in rail rates, such as proposed by respondents. But this does not mean that truck rates control the rail rates; or that the standard should be the depressed rates published by respondents in their desperate efforts to retain or regain traffic for the railroads.

In the present state of development of the truck transportation industry the comparative worth of rail service is relatively less than formerly for the shorter hauls. Value of service enters here as one of the elements to be given due consideration in arriving at reasonable rates. It is needless to dilate upon the advantages over railroad freight service which trucks offer shippers, especially for the relatively short hauls. They include expedition, flexibility rendered possible by smaller loads, pick-up and delivery which avoid delays and added charges, availability at almost any hour of the day or night, and simple or no packing requirements. All these are of the utmost importance to shippers. This is particularly true of most class-rate traffic, which is readily transportable by truck. These advantages are regarded so highly by shippers that they will move some traffic by truck at rates higher than by rail.

Authorization of the rate scales proposed by respondents, which we believe to be in excess of what the traffic will bear, would be a futile gesture, would produce no increased revenues, and would shift from the commission to the carriers the duty and responsibility of determining reasonable rates.

Giving consideration to the various elements involved in the determination of the measure of rates in distance scales for class and related traffic, including respondents' revenue needs, the operations of truck carriers, and the proper rate relations between shippers within and without w.t.l. territory, we are of opinion that maximum reasonable rates will be afforded by the application between the points within the three w.t.l. zones of the respective scales of rates set forth in Appendix U, and by the application between those zones as well as to and from zone IV of those scales with the appropriate differentials in the same appendix imposed in the manner of the w.t.l. formula.

The rates recommended are the same as or lower than the present up to 500 miles in scale I, 380 miles in scale II, and 230 miles in scale III. Although these are the distances within which truck competition is most potent, the rates therefor are not recommended with a view to meeting or eliminating that competition but as maximum reasonable rail rates under the prevailing circumstances and conditions. In fact, this record plainly indicates that respondents will be compelled extensively to maintain rates between points upwards of 500 miles apart at levels considerably lower than those herein recommended.

It is expected that the reductions in the rates for the shorter hauls will tend to regain some traffic for the railroads, and that the moderate increases in the rates for the longer hauls will not divert traffic, so that on the whole the bases recommended should



produce greater total revenues on class-rate and related traffic than the present rates.

Respondents' proposals for an interterritorial rate structure present a maze of inconsistent members lacking in cohesion. They clearly indicate differences impossible of composition among the several associations of carriers.

Although they have studiously tried to avoid giving the impression, it is apparent that the principal reason for respondents' insistent demand for restoration of the combinations is their inability to agree upon a basis for dividing the joint rates. It is significant that no joint rate basis was proposed, in disregard of the fact that the commission has neither sanctioned nor prescribed combination rates in any of the class-rate cases involving

comprehensive interterritorial adjustments. If respondents' sole aim has been to obtain increased rates, it could have been achieved as well by means of higher joint rates. There has been on file with the commission since December 5, 1931, a joint petition of the carriers in w.t.l. and official territories requesting a determination of equitable divisions of the joint rates prescribed in the prior reports, but they asked that no action be taken thereon until they make further efforts to reach an agreement. However, this is no good ground for denying shippers lawful joint rates. We think that the commission should affirm its finding in the original report that there should be a complete structure of joint rates between w.t.l. and official-Illinois territories.

# Commerce Body's Transport Views

U. S. Chamber annual meeting favors greater flexibility in rate making—  
Ashburn fears for future of river carriers

WASHINGTON, D. C.

**G**REATER flexibility in railroad rate-making, to be brought about by changes both in the laws and in their administration and by greater co-operation between railroads and shippers, was advocated by the Chamber of Commerce of the United States in a resolution adopted on May 4 at the conclusion of its annual meeting in Washington. The resolution was largely the result of recommendations which had been made by a special committee on "Railroad Rate Policies," modified somewhat at a round-table conference on the subject presided over by Fred W. Sargent, president of the Chicago & Northwestern. Another resolution, offered by representatives of the motor bus operators, favoring inclusion in the law of a prohibition against the making of rates less than "compensatory" was defeated in the conference by a small margin. The resolution adopted follows:

"Simplification and unification of classification ratings should be worked out by the railroads in co-operation with shippers and with the assistance of the Interstate Commerce Commission. Greater flexibility in railroad rates should be secured through due recognition of competitive and market conditions as well as distance or cost of service. Greater responsibility for railroad rates should be placed upon the railroad managements. The regulating authorities should recognize the propriety of varying rates as may be shown to be reasonably necessary to meet competitive or market conditions or competition of other forms of transportation without unfair discrimination against intermediate localities. The fourth section of the Interstate Commerce Act should accordingly be restored to the form which it had between 1910 and 1920, with suitable provisions to assure prompt decisions by the Commission. The statutory period for advance notice before the effective date of new rates should be reduced. The law should be amended to permit simplification and expedition of procedure in rate cases, and the maximum suspension period should be reduced to not more than three months."

## Railroads "Central Part" of Transport System

Another resolution adopted expressed the view that "Congress should adhere to a policy which contemplates the maintenance of railroad transportation as the central part of our transportation system and which encourages only voluntary consolidation of railroad properties as consolidation is justified through increased economic efficiency."

S. T. Bledsoe, president of the Atchison, Topeka & Santa Fe, addressed a round-table conference on May 2 on the topic "Permanent Measures for Co-ordinating Transportation," pointing out that declarations by the chamber as the result of a referendum, the recent recommendations of Co-ordinator Eastman, and the recommendations of the National Transportation Conference on the subject were in substantial harmony. He expressed the opinion that what is required is equality in regulation and economic opportunity, with each transportation agency paying the full cost of conducting its service and its fair share of taxes necessary to support federal, state, and local governments; and that without such legislation there can be no sound economic basis for transportation co-ordination.

"The history of the development of transportation in this country demonstrates beyond controversy," he said "that we cannot have equality in treatment of shippers without regulation; that discrimination and preferences are the inescapable results of unregulated competition, that the situation is aggravated where one agency is fully regulated and another agency is without regulation or partially or inadequately regulated. Reasonable prosperity of the transportation companies is necessary to sustain an adequate transportation system in the public interest. Possibility of such prosperity and the possibility of adequate and efficient transportation agencies are imperiled by unregulated competition. I do not believe that it is possible to prescribe a workable plan for the general co-ordination of all transportation facilities, or one that will stand the test of experience. Nor do I believe much in the way of expedition can be accomplished by legislation designed to compel co-ordination. Regulation of the character above described would open the way and give a fair opportunity for such co-ordination as may be in the public interest."

## Bledsoe Answers Ashburn

In the discussion which followed Gen. T. Q. Ashburn, president of the Inland Waterways Corporation, asserted that all of the proposals to regulate competing forms of transportation are efforts to put them out of business. No private agency, he said, could withstand the onslaughts of the railroads on water transportation and, if the government discontinues the operations of the I.W.C., inland transportation will be destroyed. Mr. Bledsoe replied that he thought the latter statement an admission that it cannot support itself. M. W. Harrison,

president of the Security Owners' Association, classed as ridiculous the idea that the railroads are passing out and said that much of the opposition to regulation of highway transportation comes, not from the truck operators but from the motor vehicle companies and oil companies.

At the round-table conference on "Railroad Rate Policies," C. D. Sturtevant, president, Bartlett-Frazier & Co., Chicago, presented the report of the committee which, he said, viewed broadly, was a protest against the excessively complicated and rigid rate structure and procedure. Ted V. Rodgers, president of the American Trucking Associations, Inc., presented a paper on "Trucking Rates," saying that a large part of the present instability in such rates was the result of railroad rate-cutting. Arthur M. Hill, president of the National Association of Motor Bus Operators, described the tentative agreement of March 28 between the bus operators and the southeastern railroads except the Southern, relating to the maintenance of minimum passenger fares, expressing the hope that the Interstate Commerce Commission would yet permit it to be consummated. He also moved the amendment, introduced by his association, proposing an amendment to the interstate commerce act to prohibit rates less than compensatory. Mr. Bledsoe pointed out the difficulty of ascertaining what passenger rate would be compensatory for a railroad and after some discussion as to the meaning of "compensatory," which Mr. Hill thought could be left to the Interstate Commerce Commission, Mr. Sargent suggested that it would be better not to submit to the board of directors a resolution the meaning of which the conference could not agree upon and the motion was defeated by a small margin.

George H. Houston, president of the Baldwin Locomotive Works, addressed a round-table conference on the subject "Importance of Capital Financing to Business Recovery," saying that if the obstructions now damming the flow of capital into private enterprise, or in prospect of doing so, can be so altered as to encourage rather than interfere with capital movement, "we will have gone a long way toward the final establishment of those conditions essential to a restoration of normal employment and prosperity."

#### H. A. Wheeler Addresses Gathering

Harry A. Wheeler, president of the Railway Business Association, addressed a luncheon meeting on "Our Transportation Problems," saying in part:

"The problems of transportation have for the past two years attracted unusual public attention. How far the discussion has produced convictions beyond those whose interests constitute them as large buyers or sellers of transportation, it may be difficult to predict but I am convinced that the subject is well developed and nearer than ever before to a constructive program of legislation the various parts of which should so coincide as to produce that National transportation policy toward which all of us have looked expectantly." Continuing, he said in part:

The time is now ripe for new transportation legislation that shall deal with the subject not as an emergency matter but as a problem that has assumed new phases of a definite and continuing character and that demands a co-ordination of services and of regulating agencies under a broad national transportation policy.

If anywhere in the "New Deal" transportation is directly affected it will be found in the ascendancy of organized labor influence, imposing operating conditions and costs that the traffic will not bear, or in a rigidity of regulation, either legislative or administrative, that takes from management the sense of sole responsibility for the conduct of the enterprise, or through the development of a government policy to enter into the field of transportation as owner and operator. I would like to deal first with the last possibility which seems rather suddenly to have been viewed in public discussion as a subject of some imminence.

I do not believe that the people want government ownership of transportation. They do not seem to recognize it as even a distant possibility, hence there is no organized opinion against it or an examination of the conditions that might precipitate it. In this lies one of the elements of danger, for it is a part of the new social program advocated by those who doubt the ability of private capital to finance, or of private management to work out a co-ordinated program, and by those who would make the government supreme wherever public interest or welfare is involved in some necessary daily service. Unless a truly vocal public sentiment is built up against it there are conditions present that may tend to force the issue, at least to the extent of putting the foot of the government into the door, and I do not have to remind you that neither transportation or any other economic service can operate successfully half government and half privately owned.

That the possibility of government ownership of the railways, or of some of them, exists in this country no one who has thoughtfully considered existing conditions will deny; but these conditions will not get out of hand if public opinion manifests itself as definitely opposed to such a course; and it is our task, not that of the Administration, to crystallize and make vocal that opinion.

Whatever may be the assumption regarding the attitude of certain advisors of the Administration on this subject, it cannot be said that executive utterances have confirmed such an attitude.

The problem of maintaining private ownership and operation of the railways is largely that of maintaining the credit of the railways in order to secure the needed supplies of capital in competition with the government and of other private enterprises. The Administration may not have openly stated that it was opposed to government ownership, but it has given several concrete evidences, as I shall try to show, that it would help to maintain private ownership, and these it should be encouraged to continue and supplement.

The major factor of immediate importance in the restoration of railway credit is the restoration of business. In this effort the Administration moved with unprecedented vigor and the results have been a decided business upturn in which the transportation interests have fully shared.

It would be far from the truth to allege that widespread agreement now exists concerning the regulatory policy essential to produce an effectively functioning transportation system; and yet the trend in opinion seems unmistakable. One needs only to review the conclusions concerning the necessity of regulating all forms of transportation offered by the National Transportation Committee in 1932, the referenda on transportation regulation conducted by the United States Chamber of Commerce in 1932 and 1933, the answers of various shippers to the questionnaire of the Co-ordinator concerning regulation, the report of the National Committee of Railway and Highway Users in 1933, the report of the Transportation Conference in 1934, and other formulations by other groups to realize that sentiment for the regulation of the rates and service of interstate highway and waterway carriers, has rather rapidly crystallized during the last two or three years.

#### Resolutions

The resolutions committee also had before it proposals for action upon a number of other subjects with respect to which the resolutions committee was not prepared to recommend that this annual meeting take affirmative action. Among the subjects which it recommended the annual meeting should refer to the board of directors were the following:

*Federal Transportation Department*, with a suggestion that the subject be considered when it is again opportune for consideration by one of the committees of the Chamber examining transportation problems.

*Highway Grade Crossings*, with a suggestion that this proposal should be considered in connection with the Chamber's activities with respect to elimination of traffic hazards.

*Unfair Competition Among Forms of Transportation*, with a suggestion that the subject be referred to the Transportation Department Committee for examination in connection with transportation codes.

Henry I. Harriman, chairman of the board of the New England Power Association, was re-elected president for the ensuing year. Paul Shoup, vice-chairman of the Southern Pacific, was re-elected a vice-president, and F. W. Sargent was re-elected a director.



# William H. Woodin Dies

Late secretary of the treasury had been well known as an executive in the railway equipment industry

WILLIAM H. WOODIN, who early in 1933 resigned from the presidency of the American Car & Foundry Company and the chairmanship of the board of directors of the American Locomotive Company to become secretary of the treasury in President Roosevelt's cabinet, died on May 3 at the Manhattan Eye, Ear and Throat Hospital, New York. He would have been 66 years old on May 27. Death was caused by the effects of a throat infection which had been troubling Mr. Woodin for some time and which caused him last December to resign as secretary of the treasury. He had served in that post during one of the most critical periods in the nation's financial history—the period which saw the banking moratorium and the abandonment of the gold standard. Of his service in this connection a statement which was issued at the White House on May 3 said:

"It is known that both the President and Mrs. Roosevelt have felt deep concern for Mr. Woodin's health ever since the day in the Spring of 1933 when he declined to take adequate care of an ulcerated throat and insisted upon working day and night during the financial crisis of the nation and the many other problems which had to be solved.

"No man in time of war showed greater devotion or made greater sacrifice than Secretary Woodin. He made a great place for himself in the hearts of all Americans and especially among those who, knowing him, loved him for himself."

William Hartman Woodin was a descendant of a family which has been associated with railway car building practically since the inception of that industry in this country. In 1849 his grandfather, after whom he was named, entered a partnership with Mordecai W. Jackson to establish at Berwick, Pa., a foundry under the firm name of Jackson & Woodin for the manufacture of stoves, plows, iron pipe and other foundry products. In 1861 this business was extended to include the manufacture of cars and in 1872 it was absorbed by a new company known as the Jackson & Woodin Manufacturing Company, one of the firms which in 1899 were merged to form American Car & Foundry Company.

Mr. Woodin was born at Berwick, Pa., May 27, 1868, and received a technical education at the Columbia University School of Mines which he attended with the class of 1890. Upon leaving college he entered the shops of the Jackson & Woodin Manufacturing Company at

Berwick and in 1892 was appointed general superintendent of that plant. Three years later, in 1895, he was elected vice-president and his promotion to the presidency came in 1899. With the merging of the plant into the American Car & Foundry Company in the latter year, Mr. Woodin was appointed district manager of the Berwick plant. He next became assistant to the first vice-president of the new company and in 1902 he was appointed a director and assistant to the

president, having general direction of the company's affairs under President Frederick H. Eaton, whom, on February 1, 1916, Mr. Woodin succeeded in the presidency. Mr. Woodin first became president of the American Locomotive Company in December, 1925, succeeding the late Andrew Fletcher. In May, 1926, however, he temporarily relinquished the position and was succeeded by Frederick F. Fitzpatrick, former president of the Railway Steel-Spring Company. After the death of Mr. Fitzpatrick in November, 1927, Mr. Woodin was again the American Locomotive Company's president until April, 1929, when, remaining as chairman of the board, he was succeeded in the presidency by William C. Dickerman.

In addition to the positions mentioned in the foregoing Mr. Woodin had been president of the American Car & Foundry Export Company; president of the American Car & Foundry Securities Corporation; chairman of the board and president of the American Car & Foundry Motors Company; chairman of the board and president of the Brill Corporation; president of the J. G. Brill Company; president and chairman of the board of the American Locomotive Sales Corporation; chairman of the board of the Montreal Locomotive Works, Ltd.; chairman of the board of the Railway Steel-Spring Company; and chairman of the executive committee of the McIntosh & Seymour Corporation. Also, he had been a director of the Consolidated Railroad of Cuba, the Superheater Company and the Federal Reserve Bank of New York.

Furthermore, aside from his business activities, Mr. Woodin was an accomplished composer and had composed many musical scores, including the "Franklin Delano Roosevelt March" which was played at the President's inaugural. Funeral services for Mr. Woodin were held in New York on May 5 and in Berwick on May 6 when his body was placed in the Woodin family mausoleum in Pine Grove Cemetery there.



William H. Woodin

## Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 28 amounted to 608,654 cars, an increase of 19,201 cars as compared with the week before and 69,845 cars as compared with the corresponding week of last year. Loading of merchandise and livestock showed reductions both as compared with the week before and as compared with last year and grain showed a decrease as compared with last year but other commodity classifications showed increases over last year and the preceding week. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

### Revenue Freight Car Loading

Week Ended Saturday, April 28, 1934

Districts	1934	1933	1932
Eastern .....	147,937	120,224	134,119
Allegheny .....	124,034	98,046	113,322
Pocahontas .....	43,328	34,371	34,304
Southern .....	89,187	85,555	83,407
Northwestern .....	71,527	67,666	63,181
Central Western .....	84,390	82,931	81,508
Southwestern .....	48,251	50,016	44,356
Total Western Districts .....	204,168	200,613	189,045
Total All Roads .....	608,654	538,809	554,197
Commodities			
Grain and Grain Products .....	26,507	41,623	32,765
Livestock .....	18,443	20,394	19,641
Coal .....	115,417	78,392	91,054
Coke .....	6,160	3,642	3,018
Forest Products .....	24,963	18,958	19,936
Ore .....	9,414	5,727	2,996
Mdse. L.C.L. ....	165,390	162,327	185,070
Miscellaneous .....	242,360	207,746	199,717
April 28 .....	608,654	538,809	554,197
April 21 .....	589,453	496,512	562,527
April 15 .....	578,837	498,182	566,826
April 7 .....	557,887	492,061	545,623
March 31 .....	608,443	498,356	544,961
Cumulative Total, 17 weeks .....	9,880,479	8,274,859	9,564,963

### Car Loading in Canada

Car loadings in Canada for the week ended April 28 totaled 43,161, which was a decrease of 1,344 cars from the previous week's total, but was 7,112 above the loadings for the similar week of 1933, according to the compilation of the Dominion, Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Apr. 28, 1934 .....	43,161	25,093
Apr. 21, 1934 .....	44,505	24,706
Apr. 14, 1934 .....	41,578	24,235
Apr. 29, 1933 .....	36,049	18,173
Cumulative Totals for Canada:		
Apr. 28, 1934 .....	699,746	398,414
Apr. 29, 1933 .....	563,510	292,326
Apr. 30, 1932 .....	701,713	367,908

## Research Shows Importance of Track Substructure

(Continued from page 684)

counterbalancing for so large a proportion of the reciprocating parts is necessary.

Figure 4 deals with rail depressions, which, as has been explained, are practically proportional to the tie pressures. The line for static loading is also shown. The heavy line represents the effect with the counterweight up. For the locomotive with the old counterbalance, shown at the top, the depression under the main driver is 0.68 in.; under the end drivers it is only about 0.1 in. Correspondingly, the load on the ties under the main driving wheel would be more than six times as great as under the end drivers. With the counterweight

down, there is a somewhat similar form of curve, showing the great variation in tie pressures and in depression of the rail.

The middle diagram shows the rail depressions for the locomotive with the new main wheel and improved counterbalancing. It will be seen that the depression under the main driver is about the same, regardless of the position of the counterweight, because it is counterbalanced for rotating parts only. As the counterbalancing for reciprocating parts was divided among the other four drivers, there is a great difference between the depression under these wheels with the counterweight up and with the counterweight down.

The lower diagram shows what would have happened if the proportion of the reciprocating parts used in counterbalancing the old locomotive had been applied to the newer locomotive. In this case the depressions and, therefore, the tie pressures will not vary very much as the train runs along the track, which, of course, is a much more favorable condition.

The design and condition of rolling stock affects the maintenance of the track in a variety of ways, and, likewise, the design and the condition of the track affects the operation and maintenance of both locomotive and cars. This interrelation is worthy of a more extended study.

## New Tractor for Railroads

THE International Harvester Company has added to its line of industrial tractors a small, compact unit, especially adapted for use in railroad terminals and on docks where ability to move speedily in cramped spaces is required. The machine is 96 in. long, 50 in. wide and 52 in. high, and has a turning radius of 103 in. It operates from a low speed of 2½ m.p.h. up to 10¼ m.p.h., with foot accelerator and hand control. Brakes of internal-expanding type are operated by foot pedal.

Features of the 21-hp. engine include replaceable cylinders, down-draft carburetion, induction-type magneto, oil air cleaner and oil filter with a metal element that may be easily cleaned. The steering worm is on roller bearings. The rear axle is semi-floating, mounted on ball bearings. Oil seals give protection against grit and dirt. Machined surfaces are provided for mounting various types of industrial equipment to be operated by the tractor. The countershaft and differential, rear axle and final drive gears are enclosed.



The 1-12—Latest Addition to the Tractor Family



# NEWS

## I. C. C. Allows Southern to Continue Low Fares

Experiment with 1.5-cents-a-mile rate is permitted to run for the remainder of this year

Continuation throughout the remainder of this year of the experimental reduced passenger fares established by the Southern and affiliated lines on December 1, including coach fares at approximately 1.5 cents a mile and fares in sleeping and parlor cars ranging from 2 to 3 cents a mile, was sanctioned by the Interstate Commerce Commission on May 5 in spite of objections made by the N. R. A., the National Association of Motor Bus Operators, and other lines in southern territory that desired to experiment further with coach fares at 2 cents a mile and had entered into a tentative agreement with the bus operators on that basis. This was accomplished by the commission by granting a waiver of certain of its tariff rules and special permission to publish tariffs on one day's notice continuing the present basis of fares, now scheduled to expire on May 31, for an additional period expiring not later than December 31. Similar permission was granted to other carriers in southern territory to continue their present fares in sleeping and parlor cars and to establish a fare of 2 cents a mile in coaches, for which they had applied, with the option of continuing the present 1.5 cent fare which was put into effect generally in the South in January after the Southern's rate had been in effect a little over a month. Other applications for permission to continue experimental reduced fares, including those of the western lines on the basis of 2 cents a mile, and interterritorial applications were also approved by the commission.

However, the commission denied the applications of all carriers for relief from the aggregate-of-intermediates provision of the fourth section of the interstate commerce act, making it necessary to line up the interline or interterritorial tariffs so that the through fares will not exceed the sums of the local fares. Since the experimental rates were established all of the interline and interterritorial tariffs had not been readjusted in conformity with them and in many instances fares from parts of official territory to the South had been kept on the old standard basis of 3.6 cents a mile.

The commission's decision was announced in a brief press notice, without a formal report, after a hearing on the various applications had been held before Division 2 on April 23 and 24 followed

by oral argument before the full commission on April 30 on the applications covering southern territory. Roads other than the Southern voiced their desire to continue the experiments with a 2-cent fare for a longer period before going to the lower rate, the Southern asked an opportunity to continue its experiment for a full year, while the N. R. A. and the bus association had argued the importance of bringing about a stabilization of competition as proposed in the tentative agreement entered into at New Orleans on March 28 with the co-operation of representatives of Co-ordinator Eastman, the commission, and the N.R.A. Some of the commissioners, however, at the argument, indicated by questions that they saw no basis on which to find any violation of law in the Southern's proposal on which they could act.

The opinion was expressed by representatives of the railroads that the granting of the Southern's application would force the adoption of the 1.5 cent rate generally throughout the South and it is believed that this means that experiments will thus be afforded with three different bases for coach fares, in the South, in the West, and in the East. The advocates of the 2-cent basis had expressed the view that its adoption might lead to a uniform basis throughout the country but that a lower rate would tend to stimulate protests against the fares in parlor and sleeping cars.

### St. Louis-Kansas City Barges

Regular service on the Missouri river between St. Louis, Mo., and Kansas City will be opened by the Inland Waterways Corporation during the latter part of June.

### Safety First Measures Save Canadian National \$250,000

Safety first measures introduced by the Canadian National during 1933 resulted in a saving of more than \$250,000 to the company in compensation payments.

### Illinois Commission Approves Continuance of Low Fares

The Illinois Commerce Commission has approved the plan of the western railroads to continue, until September 30, the reduced passenger rates placed in effect on December 1, 1933, for a period of six months.

### Pooling Contract Approved by I. C. C.

Division 6 of the Interstate Commerce Commission has approved a proposed contract providing for the division between the Chicago & North Western and the Wisconsin Central of iron ore traffic from the Gogebic Range in Wisconsin and Michigan to Ashland, Wis., and for a division of the earnings from the traffic.

## Woodlock Dissects Report of Federal Barge Line

Operations called "mixture of piracy, propaganda, humbug and extravagance"

Former Interstate Commissioner Thomas F. Woodlock, in examining the annual report of the Inland Waterways Corporation (reported in the *Railway Age* of May 5), in a recent article in the *Wall Street Journal*, points out some aspects of the operation which are not over-emphasized in the report proper. Mr. Woodlock tabulates the operations for the year as follows:

Operating revenues, including rent of buildings and other property were \$5,018,005.62, being a decrease as compared with 1932 of.....	\$1,113,340.98
Total operating expenses were \$4,928,339.40, being a decrease of.....	679,026.52
Operating income was \$89,666.22, being a decrease of.....	434,314.46
Other income, including income from funded securities and accounts, was \$67,205.22, being a decrease of....	4,681.11
Gross income was \$156,871.44, being a decrease of.....	438,995.57
Tax accruals and rents payable were \$126,822.33, being an increase of....	1,096.23
Leaving net income from operations of the Corporation of \$30,049.11, being a decrease of.....	440,091.80
Net income of the Warrior River Terminal Co., which is owned and operated by the Corporation was \$58,642.36, being an increase of....	52,977.99
Making a total net income of the combined enterprises of \$83,027.10, being a decrease of.....	392,778.18

"But," continues Mr. Woodlock, "there were credited to 'Premiums on Capital Stock Account' (which is the entry among 'Liabilities' reflecting property turned over to the Corporation by Congress when the Corporation was created) \$8,633.28 for salary of the corporation's chairman of the board, \$22,537.12 for 'personal injury claims settled by United States Employees' Compensation Commission' and \$1,099.87 for 'Miscellaneous Supplies,' a total of \$32,270.27, which is, in effect, a capitalization of expenditures which would normally be considered operating charges. Deducting this total from the consolidated net income above leaves \$50,756.83. This we may take to represent the total net return on a total net 'investment' book value of \$24,599,500.53 at the beginning of 1933 and \$24,692,754.72 at its end.

"Of this investment cash and 'marketable securities' totaled on December 31, 1933, \$3,020,582.46. Details of the 'marketable securities' are not given in the report. Assuming that on an annual gross business of \$5,000,000 per annum for the Waterways Corp. there would be needed a net cash working capital of not more than \$500,000, plus the other working assets,

(Continued on page 705)

## Net for First Quarter a 2.23 Per Cent Return

Figure of \$112,276,896 compares with \$34,551,646 or 0.68 per cent in 1933

Class I railroads for the first three months of 1934 had a net railway operating income of \$112,276,896, which was at the annual rate of return of 2.23 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In the first three months of 1933, their net railway oper-

ated \$304,604,134, an increase of 16.7 per cent. Class I railroads in the Eastern district for March had a net of \$33,166,735, compared with \$10,981,116 in March, 1933.

Class I railroads in the Southern district for three months had a net of \$19,734,415, at the rate of 2.29 per cent. For the same period in 1933, their net amounted to \$9,368,500, at the rate of 1.08 per cent. Operating revenues for three months amounted to \$109,051,132, an increase of 19.5 per cent, while operating expenses totaled \$78,279,608, an increase of 10.4 per cent. Class I railroads in the Southern district for March had a net of \$8,147,304, compared with \$3,290,900 in March, 1933.

Class I railroads in the Western district

### CLASS I RAILROADS—UNITED STATES

#### Month of March

	1934	1933	Per Cent increase
Total operating revenues	\$293,177,640	\$218,102,308	34.4
Total operating expenses	209,251,017	175,724,395	19.1
Taxes	21,646,158	22,018,383	D. 1.7
Net railway operating income	52,047,881	10,815,304	381.2
Operating ratio—per cent	71.37	80.57	....
Rate of return on property investment	2.59%	.53%	....

#### Three months ended March 31

	1934	1933	Per Cent increase
Total operating revenues	\$799,619,338	\$656,811,458	21.7
Total operating expenses	593,691,794	528,738,222	12.3
Taxes	62,992,044	65,197,830	D. 3.4
Net railway operating income	112,276,896	34,551,646	225.0
Operating ratio—per cent	74.25	80.50	....
Rate of return on property investment	2.23%	.68%	....

ating income was \$34,551,646, or 0.68 per cent on their property investment. Operating revenues for the first three months totaled \$799,619,338, compared with \$656,811,458 for the same period in 1933, or an increase of 21.7 per cent. Operating expenses for three months amounted to \$593,691,794, compared with \$528,738,222 for the same period in 1933, an increase of 12.3 per cent.

Class I railroads in the first three months of 1934 paid \$62,992,044 in taxes, compared with \$65,197,830 for the same period in 1933, or a reduction of 3.4 per cent. For March alone, the tax bill amounted to \$21,646,158, a reduction of \$372,225.

Thirty-four Class I railroads failed to earn expenses and taxes in the first three months of 1934, of which 10 were in the Eastern district, 5 in the Southern and 19 in the Western.

Class I railroads for March alone had a net of \$52,047,881, which, for that month, was at the annual rate of return of 2.59 per cent on their property investment. In March, 1933, their net was \$10,815,304, or 0.53 per cent. Operating revenues for March amounted to \$293,177,640, compared with \$218,102,308 in March, 1933, an increase of 34.4 per cent. Operating expenses in March totaled \$209,251,017, compared with \$175,724,395 in the same month in 1933, or an increase of 19.1 per cent.

Class I railroads in the Eastern district for the first three months had a net of \$73,476,871, at the rate of 3.10 per cent. For the same period in 1933, their net was \$37,591,522, or 1.57 per cent. Operating revenues in the Eastern district for three months totaled \$424,307,653, an increase of 23.5 per cent above the corresponding period in 1933, while operating expenses

for three months had a net of \$19,065,610, at the rate of 1.06 per cent. For the same three months in 1933, they had a net operating deficit of \$12,408,376. Operating revenues in the Western district for three months amounted to \$266,260,553, an increase of 19.9 per cent, while operating expenses totaled \$210,808,052, an increase of 7.2 per cent. For March alone, the railroads in the Western district reported a net of \$10,733,842, compared with a net operating deficit of \$3,456,712 in March, 1933.

### Weekly Tickets on the Lackawanna

The Delaware, Lackawanna & Western's stations in the New York suburban zone beginning June 3, will sell 12-trip weekly tickets to and from New York, good from Sunday morning to Saturday night. These tickets are sold at approximately one-fourth of the price of a regular monthly commutation ticket, the form being similar to that which was put in use in the New York suburban territory on May 1, by the Pennsylvania and the Central of New Jersey.

### Illinois Central Sued for Taxes

The Illinois Central has been made a defendant in a suit for \$250,000, filed by the secretary of the state of Illinois, who contends that the company owes the state that amount in franchise tax and penalties. While the railroad, the suit claims, paid franchise tax from 1920 to 1926, inclusive, on nothing but issued authorized stock, it should have paid on all authorized stock prior to 1927, when the law was changed to require payment on none but issued stock.

## Fourth Section Amendment Urged in Joint Appeal

Railroads, shippers and organized railroad employees present matter to President

Railroads, shippers and the organized railroad employees joined on May 4 in an urgent appeal to President Roosevelt to advise the committees of Congress of his approval of consideration at this session of the Pettengill bill to eliminate the long-and-short-haul clause of the fourth section of the interstate commerce act. Representatives of the National Industrial Traffic League, the Association of Railway Executives and the Railway Labor Executives' Association presented the matter to the President, not asking him specifically to support the bill but that he sanction hearings on the subject at this session on the ground that the various interests are now united in the conclusion that there should be a substantial amendment of the fourth section. It was later indicated that the President would take the question up with the chairmen of the committees on interstate commerce and be inclined to favor the request for hearings provided it does not interfere with an adjournment of Congress by about June 1.

The bill introduced by Representative Pettengill, of Indiana, on February 19, H. R. 8,100, would completely eliminate the long-and-short-haul provision of the fourth section, leaving only a prohibition against charging or receiving "any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this act," and a proviso that the commission may from time to time prescribe the extent to which common carriers may be relieved from the operation of this section.

A great deal of work has been done during the session by representatives of the railroads, the shippers and labor organizations to acquaint members of Congress with the reasons for removing this handicap to the adjustment of rates to competitive conditions, but the House and Senate committees on interstate commerce so far have been so busy with other matters that they have not set any time for hearings on the bill. The railroads were represented on the delegation that called on the President by S. T. Bledsoe, president of the Atchison, Topeka & Santa Fe, and Paul Shoup, vice-chairman of the Southern Pacific.

The President was told that Co-ordinator Eastman favors some amendment of the fourth section, although not to the extent of repealing the long-and-short-haul clause. He is willing to have the "compensatory" clause eliminated and to restore the law to the form in which it stood on the statute books before the 1920 amendments. The Chamber of Commerce of the United States on May 4 had adopted a resolution recommending restoration of the fourth section to the form which it had between 1910 and 1920, while the National Rivers and Harbors Congress on May 2 had adopted a resolution opposing repeal of the long-and-short-haul clause.



## Canadian Rail Heads Disagree on Merger

Beatty reiterates belief in joint operation while Fullerton champions independence

While Charles P. Fullerton, chairman of the board of trustees of the Canadian National, is telling the Dominion that there can be no amalgamation of the publicly-owned road with the privately-owned Canadian Pacific, President E. W. Beatty, addressing the annual meeting of the C.P.R. shareholders in Montreal last week, repeated the declaration he has made many times in the past three years, particularly before the Senate Committee which first dealt with the recommendations of the Royal (Duff) Commission on Railways, that the only salvation for Canada's railway situation was to merge the two roads, at least for purposes of management and operation.

Among other things, Mr. Beatty said the following:

"The railway structure of Canada is unsound and in good times as well as in bad involves economic waste of many millions of dollars per annum. It is idle to lay the blame to governments or to parliaments. We must view the situation in the light of our experience of present-day conditions and our conception of the future trend of transportation in Canada. It must not be overlooked that the situation has changed materially since the views of your directors were first placed before the government of Canada. New forms of competition have arisen. The private motor, the bus and the truck are here to stay. That they occupy a useful place in the transportation system of the country cannot be disputed, but the public interest requires that the limits of their place in that system should be ascertained and their operations and tariffs, as well as those of water carriers, controlled in the same manner as the railways. Water competition threatens to increase, and the airplane has possibilities for the future which cannot be treated lightly.

"With these considerations in mind, I feel we should without delay fortify our railway situation to meet the new conditions and ensure the solvency of the private company and the nation. After many years of study I am of opinion that unification for the purpose of administration offers the only adequate solution of Canada's railway problem, and I have constantly advocated that view both publicly and privately. The proponents of the present competitive system assert that an equal, or at least a sufficient, economy may be effected by co-operation between the two companies, but it must be patent that this cannot be so. They assert also that politics do not enter into the administration of the Government System, or political considerations into a solution of the problem. While I would like to believe that to be true, I have heard emphatic assurances of the same character made during the past years, and, unfortunately, they have been proved to be without foundation.

"The submissions which this Company has made, coupled with a recommendation of joint administration by a private com-

pany, have caused some people to deduce that the effect of the proposal would be to turn the assets of the National System over to the Canadian Pacific, the government retaining the liabilities. The government's guarantee of the National System's securities means that there is no escape from their liability to the holders of these securities save by the unthinkable course of repudiation. The purpose of unification is to provide the owners of the National System with more money to satisfy their obligations than it is possible to secure if dual and competitive systems are maintained; likewise the same economies will increase the revenues of your company. It has never been suggested that the Canadian Pacific should assume ownership of the National System—that will remain with the government of Canada, as will the ownership of the Canadian Pacific remain with its present proprietors. In effect, the suggestion is a partnership with a division on an agreed basis of the net earnings of the properties jointly operated. Private administration is recommended as that most likely to lessen or eliminate political influence and secure maximum efficiency. I am satisfied that in good times as well as in times of adversity unified administration gives the greatest assurance of economy and efficiency. The objection usually offered is said to be founded on fear of the consequences of monopoly, but I think the fear groundless. Railways do not and cannot enjoy a transportation monopoly, and the public interest may be fully protected by public control exercised through the Board of Railway Commissioners and the government. I can see no reason why that control should not, under the system I have suggested, be as effectual as it has been in the past."

### Grade Crossing Accidents Increased

An increase in the number of accidents at railroad-highway grade crossings in the month of January, is reported by the Safety Section of the American Railway Association. Fatalities resulting from such accidents totaled 128 in January, this year, compared with 127 for the same month in 1933; injured, 460 compared with 305.

### Third Morning Delivery from Chicago to New England

The Canadian Pacific, the Wabash, the Michigan Central and the Pere Marquette have established a fast freight service to New England by way of Detroit, Mich., and Windsor, Ont., which will give third morning delivery of shipments from Chicago and St. Louis, and fourth morning delivery of those from Kansas City, Mo., and Omaha, Neb.

### Central Railway Club

The Central Railway Club of Buffalo (N. Y.) will hold its next meeting at the Statler Hotel, Buffalo, on Wednesday evening, May 16. Charles E. Hill, general safety agent of the New York Central, will present a paper on the value of organized safety. The safety agents of the railroads in the eastern region are to hold an all-day meeting at the Statler Hotel, also on May 16.

## Voluntary Storage Service Held Subject to N. R. A.

Comes properly under merchandise warehousing trade code, Co-ordinator Eastman says

Co-ordinator Eastman on May 7 addressed a letter to the three Regional Coordinating Committees calling their attention to a ruling by the National Recovery Administration that storage services voluntarily furnished by transportation agencies, including marine terminals, come under the merchandise warehousing trade code, and submitting the matter to them with the recommendation that steps be taken to adjust the charges for such services accordingly. Upon present information, he says, it seems eminently proper that the charges of the railroads for storage or warehousing service which is not within their obligations as common carriers should be fixed in conformity with the provisions of the code, but even if the N.R.A. has no power to control the charges in question, he says, he has the power to control them under the emergency transportation act and "it would seem that if both the N.R.A. and the Federal Co-ordinator of Transportation take steps to establish these charges at the same level, delay from litigation may be avoided." He therefore asks the committees to report to him not later than June 15 whether or not this recommendation has been followed, in order that, if necessary, he may "consider the entry of an appropriate order."

The merchandise warehousing trade code provides that adequate rates or charges must be made by any one performing warehousing services as defined in the code, and that such rates or charges shall not be less than the lowest reasonable cost of the most efficient and lowest cost operator in the locality for the type of service for which the rate or charge is operative.

The interpretation and ruling of the National Recovery Administration, Mr. Eastman says, exclude from the authority of the national industrial recovery act only such storage as is "required by the interstate commerce act to be furnished by common carriers." Such storage is limited to storage of property "clearly within the transportation service which carriers are obliged to furnish, their duty under these provisions extends only to that storage which is necessarily incidental to transporting such property. To be incidental business, the storage must be preliminary either to the immediate transportation or immediate removal." *Propriety of Operating Practices—New York Warehousing*, 198 I. C. C. 134, 195.

In a memorandum on the "Application of National Industrial Recovery Act to the Railroads" which was made public on September 1, 1933, Mr. Eastman expressed the opinion that the railroads are not subject to the provisions of that Act. "I adhere to that view, but it applies to service which the railroads are required to furnish as common carriers," he says. "When they engage in competition with private industries in business which is not

(Continued on page 705)

### Co-ordinating Committees Asked to Consider New Orleans Allowances

Co-ordinator Eastman on May 7 sent to the Southern and Western Regional Co-ordinating Committees a memorandum from his southern regional director, C. E. Weaver, and regional traffic assistant, M. M. Caskie, in regard to allowances for drayage, in lieu of switching, made by the railroads to shippers at New Orleans, La. "It appears," he said, "that the elimination of these allowances, which the evidence shows to be wasteful, is blocked, except in the case of coffee, by a single line. Plainly, this carrier is assuming a serious responsibility, and the information before me furnishes no adequate justification for its action. I am also impressed by the showing which my representatives have made, that there is no sufficient reason for treating coffee differently from other commodities."

The committees were asked to give this matter careful consideration, and advise him whether or not these allowances can be eliminated by voluntary action of the carriers.

The memorandum points out that by appropriate provisions in the tariffs of all of the initial lines at New Orleans, allowances ranging from 2.5 to 3.8 cents per 100 pounds are made to shippers for drayage of carload freight in lieu of switching. The total amount paid out by both the eastside and westside lines at New Orleans, during the calendar year of 1933, in connection with the above drayage allowances, amounted to \$106,289.93.

In response to an inquiry addressed to the New Orleans carriers as to why they elected to pay drayage allowances to shippers in the amounts set forth above, in the movement of carload freight, when the expense of switching the cars was very much less than the drayage allowances would amount to, they stated that they would cancel the provisions in their tariffs making these drayage allowances to shippers, except they would continue without change the drayage allowance of 3.8 cents to shippers on coffee from shipside at New Orleans and sub-ports.

The eastside lines were the first to express themselves as willing to cancel the drayage allowance to shippers except on imported coffee from shipside; their action being contingent on the same action being taken by the westside lines, the memorandum states, but the Louisiana & Arkansas later declined to agree to the cancellation. The memorandum continues in part:

"It appears from our investigation that the Louisiana Railroad & Navigation Company, now the Louisiana & Arkansas Railway Company, was the first carrier to publish at New Orleans this drayage allowance to shippers and that the other lines at New Orleans met the same for competitive reasons, thereby eliminating any temporary advantage the instigator may have gained by initiating the allowance."

"As it appears that the action of the westside lines, in declining to concur in all respects to the proposal of the eastside lines, is due to the position of the Louisiana & Arkansas Railway Company, which is

desirous of continuing the drayage allowance on traffic from warehouses, and as the proposal of the eastside lines is contingent upon the same action on the part of the westside lines, we have reached an impasse in our informal negotiations with the carriers, looking towards the entire cancellation of drayage allowances on carload freight at New Orleans in the interest of economy.

"We respectfully recommend that the Co-ordinator refer to the appropriate Co-ordinating Committees the matter of these allowances, not only on all commodities other than coffee, but including coffee for the following reasons:

"We have not been sufficiently impressed with the reasons given by the carriers for their desire to continue to make drayage allowances to shippers on carload movements of coffee from shipside at New Orleans. Such allowances are not made at competing gulf ports, although at other gulf ports, particularly Houston, Texas, there is handled a large movement of imported coffee. No such allowances are made at New York or any other port handling coffee in large volume.

"In conclusion we express the opinion that all drayage allowances to shippers on carload traffic at New Orleans, whether it be domestic, import, export or coastwise on coffee or any other commodity should be eliminated and that the present practice represents a preventable waste running into a very substantial sum of money to carriers who are not in a position to have their revenues so greatly depleted."

### Tenth Annual Trail Trip Across Canadian Rockies

The tenth annual horseback trip from Jasper National Park, Alberta, to Lake Louise, will leave Jasper on July 3. The journey will be made by way of Maligne river, Medicine lake, Maligne lake and Poboktan pass. There will be a three-day layover at Castleguard mountain for those who want to climb this peak. The trip will occupy 21 days and the return trip will leave for Jasper on July 26.

### Western Railway Club

The golden anniversary dinner and annual meeting of the Western Railway Club will be held Monday evening, May 21, at the Hotel Sherman, Chicago. Following the dinner at 6.30 p.m., the members of the club will hold a brief business meeting and election of officers, after which S. M. Vauclain, chairman of the board of directors, Baldwin Locomotive Works, will deliver the principal address of the evening on the subject "What Size Wheels."

### California to Investigate Forwarding Companies

The Railroad Commission of California, acting on its own motion, has instituted an investigation into the operations of freight forwarding companies which operate between Los Angeles and San Diego to determine whether rates charged are unreasonably low, non-compensatory or otherwise unlawful. A hearing has been set for May 23 at Los Angeles, with Warren K. Brown, examiner for the commission, presiding.

### Railway Magazine Editors Hold Meeting at Cincinnati

The railway magazine as an aid to railway management was discussed at the spring meeting of the American Railway Magazine Editors' Association at Cincinnati, Ohio, on May 3 and 4. J. M. Fitzgerald, vice-chairman of the Committee on Public Relations of the Eastern Railroads, was the principal speaker, his subject being "Catch Phrases and Slogans." He classified the railway magazine as one of the most important means of promoting interest among employees, enabling them to cope with erroneous information concerning transportation. "The great value of the railway magazine," he continued, "is in supporting the morale of the railroad workers. We are witnessing the rebirth of the railroad industry right now, and our magazines must keep 'up on their toes.' Today is the sixty-eighth anniversary of the first shipment of refrigerated fruit from the South into Chicago, and, although we have made much progress in developing better transportation facilities, there still are improvements being made.

"We hear the criticism that European trains, notably the Royal Scot in England, maintain a faster schedule than American trains. Those voicing these comparisons forget that England has no railroad crossings and that the insistence of America's engineers on weight in trains has developed a safety rating for our trains that never has been equalled.

"American engineers are experimenting with lighter weight, speedier trains, but they feel that they must go slowly until the safety of this type train is proved beyond any doubt."

Walton M. Wentz, publicity representative of the Pennsylvania, and M. W. Jones, assistant editor of the Baltimore & Ohio Magazine, also spoke on the influence of the railroad magazine. Hudson Biery, public relations director of the Cincinnati Street Railway Company, in discussing the subject "What Is News?", told those present that railroads should not attempt to cover up unfavorable news. "Publicity," he said, "is a two-edged sword that cannot be used successfully by organizations that are unable 'to stand the light of day.' Do not attempt to gloss over railroad accidents, but give the papers the clear facts and you will be treated fairly."

Angel M. Groso, editor, and Macedonia Platas, assistant editor of Ferronales, the publication of the National Railways of Mexico, voiced the opinion that railway magazines are the best means of promoting a spirit of association between management and employees. Labor disputes, according to Mr. Platas, have arisen because of economic conditions during the last few years and these have been ended by a spirit of co-operation engendered by railroad publications. Mr. Groso explained how his magazine has kept in the minds of workers the high social responsibility that is theirs and how it has fostered a spirit of pride in employees' achievements.

THE NEW YORK OFFICE of the Japanese Government Railways and the Japan Tourist Bureau is now located at 551 Fifth avenue.



### I. C. C. Policy on Anthracite Rates Criticized by Jersey Central

Because the Interstate Commerce Commission's order of March 6 in the case of Christian Feigenspan, Inc., vs. The Delaware & Hudson Railroad Corporation, et al. "is deemed typical of an unsound policy of deciding rate cases on obsolete precedents," the Central of New Jersey, co-defendant with the D. & H., filed on April 27 a petition for reconsideration which contains detailed criticisms of the policy the Commission has followed for several years in regulating the anthracite carriers. The petition, prepared by General Solicitor A. H. Elder of the C. N. J., while conceding at the outset that the March 6 order directly involves only a few rates, contends nevertheless that the case marks the climax of a series of decisions which "reflect a continuing process or policy of regulation in the course of which the anthracite group of carriers, including the defendant, have passed from prosperity to dependency on government loans."

According to the petition's summary of facts the case involves the rates on anthracite coal from the Von Storch Colliery at Green Ridge, Pa., which is served directly by the New York, Ontario & Western which carrier is not a party of the proceeding. The rates apply via the N. Y. O. & W., the D. & H. and the C. N. J. to Newark, N. J., Elizabeth, Bayonne and Jersey City. A substantial claim for reparation on shipments to Newark is involved. After a hearing Division 3 of the I. C. C. dismissed the complaint but the case was thereafter reopened and the full Commission, the petition says, "without further evidence but with the citation of certain precedents, reversed the prior decision and reduced the rate. . . ; and while finding that 'complainants are not shown to have been damaged by any prejudice,' yet awarded substantial reparation." This final decision, the C. N. J. contends, "seems so manifestly arbitrary and illegal and the consequence of acquiescing in it will be so serious that this defendant feels justified in requesting the Commission to again review the case."

Because any order on reparations "will be merely preliminary to a judicial hearing" the C. N. J. petition deals only with the rate reduction order. This latter, it contends, should be rescinded for the following reasons: (1) The assertions of fact which appear in the final report are unsupported by evidence; (2) the order is based on errors of law in that it disregards the present statutory standard of reasonableness, and it rests on precedents pertaining to "a different economic era;" (3) there is non-joinder of a necessary defendant.

Each of the foregoing is considered in turn with citations designed to support the points raised at each step in the progress of the discussion. In bolstering its contention that the decision "disregards the present statutory standard of reasonableness," for example, the petition, while recognizing the fact that "the Commission may, within proper limits, test the reasonableness of rates by comparison with other rates," continues to point out that "When all of the other rates used for comparison are rates that were either prescribed or

approved by the Commission itself. . . . and the result of such rates is virtual bankruptcy, then, we submit, that the doctrine of 'relative reasonableness' breaks down—unless it is employed solely for the purpose of 'levelling-up' rates that are subnormal. This possible use of the doctrine of 'relative reasonableness' however seems to have been overlooked by the Commission."

In similar fashion other arguments and citations are included as support for the first two contentions, while in connection with the third,—that there is non-joinder of a necessary defendant—it is held that joint rates for the future cannot be prescribed from an industry served directly by the N. Y. O. & W. when that carrier was not a party to the proceeding.

In concluding, the petition says that if its argument "seems longer than this little case would seem to call for, it is because the Commission's final decision and order, if complied with, will become another precedent, typical of a series of decisions which, in the opinion of the writer, have been unsound and illegal. After petitions for reconsideration of several such decisions were denied, this defendant felt constrained to acquiesce because the courts have properly presumed that the Commission was an expert tribunal and, for that reason, have been very reluctant to set aside the Commission's orders. It is well settled, however, that a court will intervene when the Commission's action is based on clear error of law. In the series of cases, of which the present one marks a climax, in view of the progressive impairment in the credit of the anthracite carriers, it is believed that the Commission has committed legal error in two fundamental respects,—(1) in failing to test the rates in issue by the 'modified standard' prescribed by Congress and (2) in basing its findings of fact on prior findings pertaining to 'a different economic era.'"

### State Court Required to Take Jurisdiction

The Supreme Court of the United States holds that an Alabama state court's refusal to take jurisdiction of an action under the Federal Employers' Liability Act by a non-resident employee of a foreign railroad corporation (the St. Louis-San Francisco), doing business in Alabama, for injuries sustained in another state (Tennessee) on the sole ground that the action was brought under the Federal Act, was in violation of the Federal Constitution.

The Supreme Court said that the court would have had jurisdiction if the accident had occurred in Alabama; also although the accident occurred in Tennessee if the railroad had been a domestic corporation, and also although the railroad was a foreign corporation, the plaintiff a non-resident, and the accident occurred in Tennessee, if the suit had been brought for an injury suffered while engaged in interstate commerce.

"The privileges and immunities clause (of the United States Constitution) requires a State to accord to citizens of other states substantially the same right of access to its courts as it accords to its own citizens." —*McKnett v. St. Louis-San Francisco*. Decided April 30, 1934. Opinion by Mr. Justice Brandeis.

### I. C. C. Prescribes Reductions in Vegetable Rates in South

A revision proposed by the railroads of their rates on vegetables, in carloads, between points in southern territory and between points in that territory and points in official territory has been found not justified in a report by the Interstate Commerce Commission made public on May 4. The suspended schedules were ordered cancelled without prejudice to the establishment of rates in conformity with conclusions expressed in the report which approve maximum reasonable rates based on percentages of the first-class rates. The commission also prescribed reasonable maximum rates on certain vegetables from points in the Florida peninsula to points throughout the United States.

Commissioner Aitchison dissented, saying the report determines rates in principles which appear to him to be fundamentally unsound. He particularly objects to the practice of basing commodity rates on percentages of the class rates, saying that that plan of rate-making was primarily intended to eliminate preferences and prejudices as between neighboring states, but it has been extended in application to other territories and other commodities "until now a class-rate column is looked for as the solution to every commodity-rate case." He also says that the commission has placed its stamp of approval on "a rate basis which I believe is unduly high, and thus gives the carriers a complete shield against future reparation claims, and this will be the practical effect of the decision."

On the other hand, Commissioner Mahaffie dissented because of the effect on the carriers of the large reductions in rates from Florida required. He points out that the principal roads serving Florida are the Atlantic Coast Line, the Seaboard Air Line and the Florida East Coast, and that the A. C. L. in 1932-1933 earned less than 40 per cent of its fixed charges, while the other two are in receivership. "In view of this," he says, "it is important to consider whether rates that will result in further grave losses in revenue properly can be considered as other than confiscatory. The conclusions of the majority wholly disregard this consideration. The rates now in effect from Florida are those prescribed by us in 1931. They caused a reduction in revenue which this record shows was approximately \$1,500,000 per year. The majority now requires further large reductions. Florida vegetables move freely under the present rates. The industry has grown amazingly under the higher rates in effect prior to October 26, 1931. Overproduction and not freight rates is primarily responsible for the troubles of the industry. Such ruthless and widespread rate cutting as the majority now engage in can be of little benefit to the producers. But it may well be disastrous to the carriers, and, by rendering adequate service impossible, harmful to the producers as well."

"The adherence to percentages of first class makes for rigidity of railroad freight-rate adjustments, which is out of place at a time when competitive forces make flexibility a prime necessity," Commissioner Aitchison said. "Special conditions affecting certain rates can only be met by

changing the level of freight rates on that commodity throughout the entire territory. The consequent tendency of such a scheme of rate making is to give less and less consideration to particular traffic and transportation conditions, and to make rates based on average conditions or, as in the present case, to rely entirely on average density and value. As this scheme progresses, we find that instead of a system of rates with the class rates based on broad, simple principles of classification and with commodity rates closely reflecting the transportation conditions met in actual cases, we have a system that neither is based on classification principles nor reflects proper consideration for the particular conditions surrounding the traffic affected.

"Uniformity and simplification of classification was for many years the goal toward which this Commission labored. Those years of effort, culminating in *Consolidated Classification Case*, 54 I.C.C. 1, have since been lost in the maze of extraneous percentages of first class which have been prescribed or approved by us or voluntarily established by the carriers. We now have what is virtually two conflicting classifications in each territory, one stated in the consolidated classification, and the other in the percentage columns provided by the rate tariffs. We expect these percentage columns to be published as 'exceptions to the classification' and they are so handled. The result is confusion instead of clarity, complication instead of simplification, two conflicting classifications instead of one comprehensive schedule of ratings.

"The acquiescence of carriers in this plan of rate making does not relieve us from the responsibility for its inception and development. In submitting to its baneful influence the carriers follow the path of least resistance, although it is robbing them of their individual initiative in rate making, and is driving business to their competitors who adhere to no such policy of pure theory. Touch with local conditions is completely lost by them, and instead, the bureau or committee must pass upon changes in percentages of first class, which affect railroads throughout the territory. The alternative is a complete disregard of the niceties of theory and the making of rates which will move traffic. This course, I venture to prophesy, the carriers before us will be forced to adopt in this proceeding. I can see no good purpose ultimately accomplished by the decision."

### Advertising to Stimulate California Travel

With a view to meeting foreign and American competition and at the same time increase Southern California's summer tourist traffic, the All-Year Club of Southern California has launched an extensive newspaper advertising campaign in 49 of the country's leading newspapers in 28 metropolitan cities. Because of the international dollar exchange situation and disturbed political conditions in various foreign countries, this coming summer is regarded as a strategic time for western travel. Surveys during the past three years have shown that more than 80 per cent of pleasure travelers are limited to a two weeks' vacation and this campaign presents

a merchandising plan designed to induce vacationists living as far east as Chicago to spend 11 days sightseeing in California out of the two weeks away from business. This two weeks' plan is dovetailed with the reduced round-trip fares of the rail, steamship, air and motor coach lines serving California.

### Number of Employees Increased in April

An increase of 12,864 in the number of railway employees in April as compared with the number in March is shown in the Interstate Commerce Commission's monthly statement of railway employment. As of the middle of April the total was 1,011,676, an increase of 9.31 per cent as compared with the number in April of last year. The number in the train service group showed an increase of 13.87 per cent and the number in the maintenance of equipment group showed an increase of 13.89 per cent.

### Lettering and Marking Cars

Upon instructions by the General committee of the American Railway Association, Mechanical division, the recommendation of the Committee on Car Construction, covering the addition of a new note No. 13 to Fig. 1 of the Manual showing standard and recommended practice in lettering and marking box cars, was ordered submitted to a letter ballot. The

letter-ballot returns, given in Circular D.V.-816 under date of May 3, 1934, indicated general approval of the proposed new note, which is as follows: "For automobile box cars, equipped with automobile loading racks, a 3-in. white stripe is to be painted on the right-hand door, facing side of cars, extending full width of the door, approximately 3 ft. above floor line and, immediately above this stripe, the words 'Auto Rack' are to be stenciled in white letters 2 in. high; this marking to be applied to both sides of car." This change in recommended practice has been approved by the American Railway Association, effective immediately.

### Net Deficit for Two Months \$26,384,688

In spite of an increase of over \$36,000,000 in net railway operating income in the first two months of this year as compared with the corresponding period of 1933, the Class I railroads at the end of February had a net deficit after fixed charges of \$26,384,688, according to the Interstate Commerce Commission's monthly compilation of selected income and balance-sheet items. This compares with \$63,201,924 for the first two months of last year. For February the net deficit was \$14,590,702. Total current assets at the end of February were \$996,216,156, while total current liabilities were \$1,188,379,033. The statement follows:

### SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 144 reports (Form I BS) representing 149 steam railways  
TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of February		For the two months of	
1934	1933	1934	1933
<b>Income Items</b>			
\$29,281,012	\$10,133,779	1. Net railway operating income	\$60,209,884
12,093,856	13,078,126	2. Other income	25,761,781
41,374,868	23,211,905	3. Total income	85,971,665
10,988,371	10,798,621	4. Rent for leased roads	21,941,716
43,223,991	44,018,605	5. Interest deductions	86,841,600
1,753,208	1,869,434	6. Other deductions	3,573,037
55,965,570	56,686,660	7. Total deductions	112,356,353
d 14,590,702	d 33,474,755	8. Net income	d 26,384,688
11,959,707	11,749,056	9. Dividend declarations (from income and surplus):	
2,853,878	2,495,546	9-01. On common stock	13,824,036
		9-02. On preferred stock	3,296,100
<b>BALANCE-SHEET ITEMS</b>			
<b>Selected Asset Items</b>		<b>Balance at end of February</b>	
		1934	1933
10. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)		\$744,080,227	\$766,396,588
11. Cash		295,294,637	275,416,159
12. Demand loans and deposits		36,827,296	33,097,299
13. Time drafts and deposits		48,236,558	22,462,808
14. Special deposits		31,336,729	25,781,708
15. Loans and bills receivable		7,477,728	10,721,180
16. Traffic and car-service balances receivable		52,096,375	44,351,058
17. Net balance receivable from agents and conductors		44,453,226	40,521,830
18. Miscellaneous accounts receivable		138,091,986	133,493,328
19. Materials and supplies		295,161,334	313,054,615
20. Interest and dividends receivable		40,751,730	37,172,004
21. Rents receivable		2,122,257	2,458,063
22. Other current assets		4,366,300	9,585,447
23. Total current assets (Items 11 to 22)		996,216,156	948,115,499
<b>Selected Liability Items</b>			
24. Funded debt maturing within six months*		266,574,919	227,011,531
25. Loans and bills payable		334,589,696	309,738,667
26. Traffic and car-service balances payable		66,364,246	61,000,626
27. Audited accounts and wages payable		204,153,229	200,008,372
28. Miscellaneous accounts payable		46,462,573	58,394,503
29. Interest matured unpaid		235,832,315	170,471,214
30. Dividends matured unpaid		4,638,582	4,828,883
31. Funded debt matured unpaid		111,277,937	53,872,795
32. Unmatured dividends declared		23,879,939	20,054,956
33. Unmatured interest accrued		113,025,621	111,352,850
34. Unmatured rents accrued		31,598,570	29,877,733
35. Other current liabilities		16,556,325	11,189,090
36. Total current liabilities (Items 25 to 35)		\$1,188,379,033	\$1,030,789,644

\* Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

Ø Includes obligations which mature less than two years after date of issue.

d Deficit.



### Southern Summer Schedules to Western North Carolina

The Southern, on June 9, will inaugurate, for the summer months, additional train service into the mountain resort section of Western North Carolina. New and additional sleeping car service will be established to Asheville from New Orleans, La., Richmond, Va., and Atlanta, Ga. Also, summer trains Nos. 1 and 2 between Spartanburg, S. C. and Asheville will be re-established, effective June 10, and will handle the New Orleans-Asheville (via Atlanta) and the Atlanta-Asheville sleeping cars. The announcement further states that the usual all-expense tours of the Smoky Mountains Tours Company will be available from Asheville to and through the Great Smoky Mountains National Park and to other points of interest in the region.

### The Railway Tie Association

The Railway Tie Association will hold its sixteenth annual convention at the Hotel Cleveland, Cleveland, Ohio, on May 16-17. The program for this meeting will be as follows:

#### Wednesday Morning

Reports of officers.  
Address by J. J. Bernet, president, Chesapeake & Ohio and New York, Chicago & St. Louis  
Address by R. L. Lockwood, director, Section of Purchases, Federal Co-ordinator of Transportation.  
Address by John V. Neubert, chief engineer maintenance of way, New York Central.  
Report of T. H. Harden, counsellor.  
Report on tie statistical service.  
Address by A. S. Fathman on "Statistical Needs of the Railway Tie Association."

#### Wednesday Afternoon

Discussion of plans for carrying out provisions of N.R.A. code.

#### Thursday Morning

Continuation of discussion of N.R.A. code.  
Reports of subdivision committees.  
Closing business, including reports of committees and election of officers.

### Travel Now and Pay Later

The Cunard Line and associated lines have made arrangements with a number of banks throughout the United States for financing European trips and pleasure cruises under a deferred payment plan which arranges for all major expenses such as railroad and steamship fares, hotels and sightseeing expenses. A down payment of approximately 25 per cent of the total cost of the trip is required before sailing. Subsequent payments over a period of a year start 60 days after the sailing date. The plan is applicable to all classes and types of accommodation. According to the announcement of the plan, "Even though the family budget at the present time may be somewhat slim, a great many families will see their way clear to take a real vacation provided they can pay for it conveniently over an extended period."

### P. & S. Annual Meeting June 8

The Purchases and Stores division, American Railway Association, has completed arrangements for its annual meeting to be held at the Palmer house in Chicago on June 8. In the interest of economy, the division will not hold an annual convention, but will be restricted to a meeting of the General and Advisory commit-

tees for the purpose of reviewing the work of standing and special committees and to discuss other matters which have been assigned to the division for attention, or which the division has under consideration, including the problem of purchasing under the codes, and the work of the federal co-ordinator. Chairmen of committees are expected to be present at the meeting and the winners of the annual essay contest of the division will be announced and the papers presented. The meeting will be conducted by Chairman G. E. Scott.

### Senate Committee Considers Railway Labor Bill

The bill proposed by Co-ordinator Eastman and the Railway Labor Executives' Association to amend the railway labor act and create a national board of adjustment was considered by the Senate committee on interstate commerce on May 3 and referred to a sub-committee, headed by Senator Dill. Mr. Eastman met with the sub-committee on May 8, and the latter has since put the bill in final shape including most of the amendments suggested by Mr. Eastman.

Another sub-committee is working on a revision of the pension bill.

The petition being circulated by Representative Withrow, of Wisconsin, to discharge the House committee on interstate and foreign commerce from consideration of the six-hour day bill so that it may be brought before the House, is reported to have been signed by 96 members. A total of 145 signatures is necessary to take the bill from the committee.

### N. & W. Public Relations Advertising Stresses Alertness of Railroads

Declaring that the American railroads are progressive and awake to their opportunities, the Norfolk & Western Ry. in a statement recently published as one of a series of advertisements in newspapers along its lines, says that the railroads, individually and collectively are spending millions of dollars in a huge, well-balanced and energetic program of scientific research to improve facilities, safety and service. Today, according to the statement, the carriers have under way extensive research on approximately 275 projects for improving railway equipment, practices and service. Since 1923 they have expended, through the American Railway Association, nearly \$6,750,000 for research, experimentation and development.

The N. & W., it is set forth, "is a leader in the field of rail transportation research and improvement, and maintains extensive physical and chemical laboratories at Roanoke, Va., manned by experts and equipped with the most modern facilities for scientific exploration. In these laboratories, according to the statement, N. & W. technicians last year made approximately 20,000 tests and analyses of nearly everything used by the railway—the steel that goes into locomotives, cars, rail, and bridges; concrete, ballast, paint, lubricating oils, draft gears, signals, brakes, coal, water, etc."

The statement further sets forth that the N. & W. was the first railroad "to pioneer in heavy electric traction. Its en-

gineers were among the first to invent and put into practice a satisfactory method of tunnel ventilation. It has been a leader in improving locomotive performance and devices; in the development of track scales, improved and safer shop practices; and it was one of the first railroads to discard completely wooden passenger coaches."

### Co-ordinator Eastman Inquires into Railroad Fiscal Expenses

Co-ordinator Eastman has addressed to all railroads a questionnaire calling for a mass of detail information for the years 1929 and 1933 regarding the activities and expenses of offices maintained in the city of New York at which is handled work in connection with transfer of stock, distribution of dividends, registration, redemption, and transfer of bonds and equipment obligations, payment of interest coupons, and special fiscal work such as custodial or depository service for handling of securities, etc. If respondents have such offices in New York they are asked to state whether it is maintained in connection with general offices, office of chairman of the board, corporate secretary or other office, or as an independent office. The information called for includes such items as number of persons employed, floor space and rentals, equipment and expenses, number of accounts maintained, certificates and dividend checks issued, number of units of bonds, etc. Railroads are asked to state whether they maintain a record of holders of bonds and equipment obligations, whether they employ banks, trust companies or other agencies in any city to perform any part of their fiscal work, and to furnish an itemized statement of mortgages, equipment trust agreements and other indentures, showing the names of corporate trustees acting thereunder and the fees paid in each case for such services.

### Would Eliminate Allowances for Salt Transported with Hides

The attention of Co-ordinator Eastman has recently been called to what he describes as a "waste of transportation" growing out of tariff provisions permitting tare weight allowances in shipment of green salted hides or skins on account of the salt preservative transported therewith and he has addressed a letter to the Regional Co-ordinating Committees stating that there appears to be no good reason why the rail carriers should be asked to make such allowances and requesting that the matter be taken up at once with the appropriate tariff publication agents in order that they may be eliminated as early as practicable.

The Interstate Commerce Commission, he says, has complained of the form of the tariffs, and the question of form is under consideration by the Southern Freight Association, but regardless of the tariff formula, he calls attention to the merits of the practice whereby for many years the carriers have made an allowance from the gross weight of the shipment for the salt used as preservative.

"In a letter from Mr. Manker, of Armour & Company, to Director Crosland, of the Interstate Commerce Commission dated October 16, 1933," Mr. Eastman says,

"it is stated that the weights arrived at on green salted hides on which freight charges are assessed are identical with the weights on which the packers receive pay for the hides from the purchasers thereof. A typical case is set out, wherein settlement was made for the hides on an aggregate weight of 45,564 pounds and freight charges were collected on that weight. The hides as taken from the hide cellar, after having been shaken to remove as much salt as possible, weighed 47,213 pounds. Ten hides were selected after being weighed as packed and these were swept and reweighed indicating a loss of 64 pounds. This loss was then applied to the total hides in the carload shipment, resulting in an estimated loss after sweeping on the entire consignment of 1,760 pounds. A further deduction of 129 pounds was made representing manure spots. Although the shipments move forward as taken from the hide cellar and the salt preservative is transported along with the hides, the allowance for salt and manure is made."

### Pacific Coast Safety Meeting

More than 250 delegates representing the major railroads, short lines and electric railways in California, Oregon, Utah, Nevada and Arizona, attended the annual Pacific Coast regional conference of the Safety section of the American Railway Association in San Francisco on April 27. Among the railroads represented at the one-day session were the Southern Pacific, the Western Pacific, the Union Pacific, the Atchison, Topeka & Santa Fe, the Northwestern Pacific, the Sacramento Northern, the Key System, Ltd., and the Pacific Electric. A. A. Lowe, supervisor of transportation, Southern Pacific, presided as chairman. A general review of safety work carried on by the railroads throughout the nation was given by C. L. LaFountaine (G. N.), national chairman of the Safety section. He observed that passenger trains are 20 times safer than automobiles and 100 times safer than airplanes, pointing out that the number of fatalities to passengers on railroad trains of the country was one-fourth less last year than in 1930. Casualties to railroad employees were reduced last year to about one-quarter what they were in 1930.

Mr. LaFountaine pointed out that only about one-half of one per cent of all accidents to and in connection with automobiles on the highways happen at railroad crossings. "The number of persons killed and injured in grade crossing accidents last year," he said, "was only about one-half the number reported in 1928, the year of heaviest toll. On the basis of last year's figures, a train could make approximately 112 round trips between San Francisco and New York with only one death at a grade crossing."

A. J. Lundberg, president of Key System, spoke on the progress being made by electric railways of the country in the promotion of safety. He stated that the number of accidents involving street cars and buses had been reduced 35 per cent in the past six years, based on reports of 250 companies serving more than 65 per cent of the nation's urban population.

Among the other speakers were: L. C.

Collett, safety supervisor, and Charles Raitt, assistant master mechanic of the Atchison, Topeka & Santa Fe; Hollis Thompson, city manager of Berkeley, Cal.; E. Raymond Cato, chief of California's highway patrol; M. S. McKenna, agent, and E. A. LaRieu, conductor, Southern Pacific; H. A. Mitchell, president of the Sacramento Northern; H. J. Beem, superintendent of the Western Pacific; and C. H. Fry, safety superintendent of the California Industrial Accident Commission.

### Chicago-California Time to Be 53¾ Hr.

Reductions in the running time of passenger trains between Chicago and California will be placed in effect on May 20.

The Chief of the Atchison, Topeka & Santa Fe will be run on a schedule of 53¾ hr. from Chicago to Los Angeles and 55 hr. eastbound, as compared with 56 hr. westbound and 56½ hr. eastbound as at present. It will leave Chicago at 11:15 a.m. instead of 11 a.m. and will arrive in Los Angeles at 3 p.m., the third day instead of 5 p.m. Returning, it will leave Los Angeles at 11:45 p.m. instead of 10:30 p.m. and arrive in Chicago at 8:45 a.m. instead of 9 a.m. The Grand Canyon Limited of the Santa Fe will operate on a schedule of 62 hr. 35 min. westbound, as compared with 65 hr. as at present and 65¼ hr. eastbound, as compared with 65 hr. 19 min. as at present. It will leave Chicago at 11:35 p.m. as at present and will arrive in Los Angeles at 12:10 p.m. instead of 2:35 p.m. Returning, it will leave Los Angeles at 11:30 a.m. instead of 12:01 p.m. and will arrive at Chicago at 6:45 a.m. instead of 7:20 a.m. The California Limited of the Santa Fe will continue on its present schedule of 61 hr. westbound, while its eastbound schedule will be 58¾ hr. instead of 61¼ hr. Eastbound, it will leave Los Angeles at 8:15 p.m. instead of 6:15 p.m. and will arrive in Chicago at 9 a.m. instead of 9:30 a.m. The Navajo of the Santa Fe will operate on a schedule of 61 hr. 25 min. westbound instead of 71 hr. 10 min. and 58¾ hr. eastbound instead of 61¼ hr. The train will leave Chicago at 10:20 a.m. as at present and will arrive in Los Angeles at 9:45 p.m. the third day instead of 7:30 a.m. the fourth day. Returning, it will leave Los Angeles at 7:05 p.m. instead of 4:50 p.m. and will arrive in Chicago at 7:50 a.m. instead of 8:05 a.m. The Missionary will leave Los Angeles 30 min. later than at present, or at 10:30 p.m. and will arrive in Chicago at 7:35 p.m. the fourth day as at present.

The Golden State Limited operating over the Chicago, Rock Island & Pacific and the Southern Pacific will continue on a 60-hr. 55-min. schedule westbound but will have its eastbound time cut from 61 hr. 10 min. to 58¾ hr. Coincident with this change the Sunset Limited of the Southern Pacific will leave Los Angeles at 7 p.m. instead of 6:20 p.m. and will arrive in New Orleans, La., at 7:35 a.m. as at present. Returning, it will leave New Orleans at 10:40 p.m. and will arrive in Los Angeles at 7:30 a.m. instead of 7:40 a.m. The westbound schedule of the Apache of the Chicago, Rock Island & Pacific

and the Southern Pacific will be shortened 5 min., the train arriving in Los Angeles at 9:45 p.m. instead of 9:50 p.m.

The San Francisco Overland Limited, operating over the Southern Pacific, the Union Pacific and the Chicago & North Western from San Francisco to Chicago, will have its time cut from 61 hr. to 58 hr. 50 min. The train will leave San Francisco at 8 p.m. instead of 6:20 p.m. and will arrive in Chicago at 8:50 a.m. the third day instead of 9:20 a.m. Its westbound schedule remains the same, 60 hr. 55 min. The schedule of the Los Angeles Limited of the Southern Pacific, the Union Pacific and the Chicago & North Western will be 58¾ hr. eastbound instead of 60 hr. 40 min. The train will leave Los Angeles at 8 p.m. instead of 6:05 p.m. and will arrive in Chicago at 8:45 a.m. the third day as at present.

### Durable Goods Committee Asks Amendment of Securities Act

Urging further amendments to the securities act of 1933 in addition to those now pending in the Senate, Chairman George H. Houston of the Durable Goods Industries Committee has asked Chairman Fletcher of the Senate banking and currency committee to modify the act to conform more closely to the British Companies Act so that the law, without losing its "wisdom teeth," would encourage rather than retard the movement of capital into business.

"It is essential," he said, "that changes be made in the requirements for registration under this act with the purpose not only of making the information required of real value to investors by eliminating unnecessary material, but also of lightening the burden on industry which is generally recognized by those engaged in business as being so severe as to make them unwilling to register securities unless such registration is necessary to meet maturities or to avoid receivership.

"We submit herewith amendments which we believe will give the relief desired. The form in which they are presented embodies the essentials and attempts to harmonize the differences in the bills introduced in the Senate by Senators King, Thomas and Hastings, as well as the amendments proposed by your rider to S.3420, and suggestions made by various persons who are familiar with the Act. The result more nearly approaches the British Companies Act than any one of the other proposals and also leaves the existing law with many of its teeth. These, however, we hope will justify the name of 'wisdom teeth'.

"It is our belief that the problems affected by amendments to the Securities Act of 1933 are so fundamental that serious proposals concerning them should be given careful consideration by Congress. In order that this may be accomplished in an orderly and non partisan manner and opportunity afforded for comparison of these amendments with the others now before the Senate, we respectfully request that you forthwith introduce in the Senate of the United States the accompanying draft of amendments as a companion to the



amendments introduced by you on May Fourth last."

A committee of 28 prominent industrialists has sent to the chairmen of Congressional committees handling stock market legislation an appeal for amendment of the bill to omit drastic provisions relating to reports required to be filed by thousands of corporations whose securities are not listed on the exchanges.

## Woodlock Dissects Report of Federal Barge Line

(Continued from page 697)

the corporation has a surplussage of cash and 'marketable securities' of fully \$2,500,000. Last year income from 'funded securities' totaled \$22,122.54 and income from 'unfunded securities and accounts' was \$39,970.97—together \$62,093.54. Now deducting this sum from the \$50,756.83 above mentioned, it would appear that the operations of the entire enterprise last year, when properly charged with the expenses belonging thereto, would have shown a deficit of \$11,336.71, but for income on capital not needed in the business. Moreover, the return on the capital thus invested was at the rate of no more than 2½ per cent.

"The people of the United States have an investment in this enterprise of \$24,692,754.72. The corporation started business on its own account on June 1, 1924. The corporation's secretary-treasurer calls attention to the fact that in the nine years and seven months of its operation to December 31, 1933, the corporation earned a net profit of \$706,692.57. He informs us that this 'was after absorbing depreciation charges amounting to \$4,629,252.04. The operations of the corporation for the period named here, therefore, produced an income before depreciation in the sum of \$5,743,643.42.' Why stop at this statement? Why not tell us how much 'income' the corporation earned in those years before paying operating expenses? Does the secretary-treasurer wish us to believe that depreciation is an *optional* charge on marine equipment, or, perhaps, a form of surplus? And how much of an operating surplus would have been earned in those nine and one-half years had all costs of operating been charged to operating expenses and the income from idle capital in cash and investments been excluded?

"The comptroller informs the secretary-treasurer that the 'direct savings to the public' on traffic handled by the Federal Barge Lines between June 1, 1924; and December 31, 1933, amounted to \$20,644,000, this being 'the difference between the charges paid to the Barge Lines and what the charges would have been had the traffic moved all rail.' Yet, 'the public' has had an investment averaging during that period of, in round figures, \$20,000,000. Interest at 3½ per cent on this would be \$7,000,000. Reckoning gross operating revenues at around \$5,000,000 annual average, and taxes of, say, 6 per cent on this (to equate water with rail) taxes would have been, in round figures, \$3,000,000 more.

Net book value of plant on December 31, last, was \$20,920,503.50; does anyone suppose that one-half this sum would be paid for that plant today? And, even if it were, there would be \$10,000,000 loss to add to \$10,000,000 for loss of interest and taxes. And all that would have happened would have been that *all* 'the public' had directly subsidized a few of the public in the sum of \$20,000,000 over nine and one-half years—if the comptroller's 'savings' are correct—besides spending millions more per annum on maintenance of the river for navigation purposes.

"How much longer is this mixture of piracy propaganda, humbug and extravagance to be carried on by the government of the United States? This is 'old' enough surely to be no part of the New Deal."

## Defeat Move to Probe C. P. R. Finances

An attempt by the Liberals in the Canadian Parliament, aided by the Progressives, to bring the Canadian Pacific before the special committee which considers annually the estimates and annual report of the Canadian National was defeated in Parliament at Ottawa last week when an amendment to the motion to set up this committee was ruled out of order and the decision of the speaker, on appeal, was sustained by a vote of 58 for the ruling and 44 against.

Supporting the amendment, Wilfred Hanbury (Vancouver-Burrard) urged that it was within the rights of Parliament to have the C. P. R. officers before the committee, since Parliament had been called upon to sanction the guarantee given by the government, under the emergency powers statute, to the banks for a \$60,000,000 loan to the Canadian Pacific. This view was strongly taken, too, by J. S. Woodsworth (Progressive). Mr. Guthrie (for the Government) declared that the Hanbury amendment was a substantive motion and could not be entertained.

The proposed amendment would have given the committee inquisitorial powers, not only over railways owned by the government but also those "whose borrowings have been guaranteed by the Government." In defending the motion, Mr. Hanbury said, in part:

"In speaking before the annual meeting of shareholders of the Canadian Pacific at Montreal during the present week, Mr. Beatty, the president of that company, stressed the seriousness of the railway situation—we will assume with particular reference to his own company.

"Therefore I believe that the affairs of the Canadian Pacific Railway should be investigated by this house, based on our guarantee of their securities. In support of that view I wish to quote what this government have said to the province of British Columbia—quite properly, I think—that if the government of the province of British Columbia are to come to this government and ask for financial relief, this government should have the opportunity of reviewing their estimates."

Mr. Hanbury then read a letter from Premier Bennett of Canada to Premier

Pattullo of British Columbia, who was asking financial aid of \$8,000,000 from the federal treasury, in which Mr. Bennett said he was ready to give limited help if the British Columbia estimates of expenditures and receipts were submitted to him and if the Pacific Coast government would try to get within \$1,000,000 of balancing its budget.

## Voluntary Storage Service Subject to N.R.A.

(Continued from page 699)

included within their common carrier obligations, they should be, and I believe are, subject alike with the competing private industries to the provisions of the national industrial recovery act. In the decision above cited, the Interstate Commerce Commission clearly defined the warehousing service required of the railroads as common carriers to be: (1) Enforced (involuntary) storage. (2) Bona fide in-transit storage temporarily required in the transportation of commodities by common carriers (not voluntary storage under storage-in-transit privileges or other types of commercial warehousing service)."

The N. R. A. ruling was made on a question as to whether the service rendered by the Canton Company at Baltimore came under the code. The company receives newspaper paper coming to Baltimore by water; the paper is lodged on the pier for storage to be delivered by trucks when required for use.

In its decision, which related particularly to railroad warehousing operations in the Port of New York district, the commission found "that the respondents' (the railroads') warehousing and storage practices, charges assessed, and allowances made in connection therewith dissipate their funds and revenues, are not in conformity with efficient and economical management as contemplated by the interstate commerce act, and are not in the public interest. Respondents are admonished to take prompt corrective action."

"The rail carriers directly or through dominated and controlled subsidiaries seek out the larger shippers and offer them lower rates for warehousing services and warehouse space than the private warehousemen," the commission said.

"It appears of little concern to the railroads that the charges for the warehousing services and space furnished are not compensatory, because they expect to recoup any losses through the revenue derived from rail transportation."

While the commission refrained from continuing its investigation of railroad warehousing practices at other points throughout the country, it stated: "All carriers subject to the act are hereby admonished that their practices and charges should be adjusted in conformity with the principles announced in this report. Failure of the carriers so to adjust their practices and charges should be deemed sufficient reason for the institution of further investigations in conformity with the pending motion (to extend such investigations to other points)."

## Equipment and Supplies

### P.W.A. Loans to Railroads

Public Works Administrator Harold L. Ickes announced on May 8 that he had signed a contract for a work-creating loan of \$1,550,000 to the Boston & Maine, to be used for a general program of roadway improvement that is estimated to create 1,330,000 man-hours of additional employment for maintenance of way men. This is the third such loan to the Boston & Maine to be placed under contract by Administrator Ickes. A fourth contract calling for a loan of \$2,628,000 to be used for the purchase of new locomotives and cars is in course of preparation. The total of all four loans will be \$7,318,000.

The Boston & Maine estimates that \$752,814 of the third loan will be paid in wages to its employees and that \$797,186 will be used to buy materials. The company has estimated that its employees will be paid \$501,000 from the other two loans for which contracts have been signed.

The P.W.A. has signed contracts with the Grand Trunk Western covering a loan of \$250,000 for rail and fastenings; with the Delaware, Lackawanna & Western for \$1,043,000 for conversion of a locomotive and cars; and with the Chicago Great Western for \$1,200,000 for the purchase of 500 box cars.

Also, P.W.A. has allotted \$36,000 to the Missouri Southern to be applied toward the purchase of a Diesel-electric locomotive.

Administrator Ickes has now signed contracts covering \$182,074,000 of the \$199,607,800 allotted for loans to railroads.

Administrator Ickes, who announced last week his intention of inquiring into the action of the New York Central in making a contract with the Weirton Steel Company for spikes and tieplates, because the government has charged the steel company with failure to comply with labor provisions of its code, said on May 8 that apparently the matter is not one for consideration by the P.W.A. at this time because the steel company is still under the Blue Eagle and the question as to its compliance is in the courts.

### LOCOMOTIVES

THE MISSOURI SOUTHERN is inquiring for one oil-electric or gas-electric locomotive for road freight service.

### PASSENGER CARS

THE BOSTON & MAINE has ordered 10 deluxe coaches from the Pullman-Bradley Car Corporation, subject to the approval of the Public Works Administration.

THE BALTIMORE & OHIO has placed an order with the American Car & Foundry Company for 16 passenger cars to be used in two streamlined trains, one train to be propelled by a steam locomotive and the other by a Diesel-electric locomotive. The purchase of this equipment will be financed by a Public Works Administration

loan as reported in the *Railway Age* of May 5, page 663.

### IRON AND STEEL

THE UNION PACIFIC has ordered 25,000 tons of rails, placing 10,000 tons with the Colorado Fuel & Iron Company, 10,000 tons with the Illinois Steel Company and 5,000 tons with the Inland Steel Company.

## Supply Trade

The **Rails Company** has moved its office from 405 Lexington avenue to 50 Church street, New York.

The **Vapor Car Heating Company, Inc.**, has moved its office from 75 West street to 230 Park avenue, New York City.

**J. G. Wallace**, representative of the railway sales division of **The Texas Company** (California), Hearst building, San Francisco, Cal., has been appointed assistant district manager.

**W. A. Mayfield**, assistant traffic manager of **Swift & Co.**, has been promoted to traffic manager, to succeed **Richard O'Hara**, who has resigned to enter a business of his own.

The **National Spray Painting and Finishing Association** has selected the following to serve as members of the code authority of the spray painting and finishing equipment industry: **H. W. Beach**, president of the Eclipse Airbrush Company, Newark, N. J.; **W. B. Thompson**, president of Spraco, Inc., Somerville, Mass.; **W. F. Gradolph**, sales manager of the DeVilbiss Company, Toledo, Ohio; **J. F. Roche**, executive vice-president of the Binks Manufacturing Company, Chicago; **J. A. Paasche**, president of the Paasche Airbrush Company, Chicago; and **S. Deutsch**, president of the Electric Sprayit Company, South Bend, Ind.

**M. C. Terry** has been appointed head of the commercial applications department of the **Kelvinator Sales Corporation**, Detroit, Mich. Mr. Terry, who was former manager of the company's air-conditioning department, succeeds **John Wyllie**, who resigned recently to join the **Liquid Cooler Corporation** as sales manager. The department now under Mr. Terry's supervision replaces Kelvinator's sales engineering department and includes all air-conditioning and commercial application work. Mr. Terry began his engineering career with the Westinghouse Electric & Manufacturing Company in 1919, engaging in domestic refrigeration apparatus development and research for six years. In 1926, he organized the refrigeration engineering department in the Westinghouse Mansfield, Ohio, works and managed the department until 1930. He then held a similar position in the Springfield, Mass., plant, serving during 1932 as chief refrigeration engineer at Springfield. Mr. Terry joined the Kelvinator organization in September, 1932, and was engaged in com-

mercial application work in its engineering department; from 1933 until the present time he has managed Kelvinator's air-conditioning division.

**Arthur H. Smith**, formerly vice-president of the Railroad Materials Corporation, has joined the **Youngstown Sheet & Tube Company**, Youngstown, Ohio, as special representative of railroad sales in the East. Mr. Smith will have his headquarters at New York, and will cover the territory east of Youngstown from Maine to Florida. He is well acquainted with steel and railroad men throughout the



Arthur H. Smith

country, having been connected with railroad sales almost continually since 1912 when he joined the Railroad Supply Company, at New York. In 1917, he left that company to join the army; he returned from the war in 1919 and became assistant to the vice-president. In 1930, he was appointed vice-president of the Railroad Materials Corporation, remaining in that position until joining the Youngstown Sheet & Tube Company.

### Hearing Set on Supplemental Code for Railroad Contracting

The National Recovery Administration has announced through the office of Deputy Administrator B. R. Value, that public hearing will be conducted on May 21 on codes of fair competition supplementary to the basic code of the construction industry, submitted by the Associated General Contractors on behalf of the following subdivisions of the industry: highway contracting, building contracting, and heavy construction and railroad contracting.

The three related supplemental codes contain elaborate definitions of the work to be performed by each type of contractor affected; and each specifically exempts from its provisions all operations carried on by members of the other two divisions, as defined.

Labor provisions of the basic construction code are adopted for each of the three divisions; with additional provisions in the supplements for the highway contracting and the heavy construction and railroad contracting industries, whereby those divisions may permit the setting up of mutual agreements between labor and representative groups of employers in various local communities.



All three codes contain detailed provisions to govern bidding practices.

### Small Locomotive Manufacturing Code Approved

National Recovery Administrator Hugh S. Johnson has approved the code of fair competition for the small locomotive manufacturing industry as supplemental to the master code for the machinery and allied products industry. The industry will operate under the wage, hour and labor provisions of the basic code. Operation under the N. R. A., effected improvement in both factory employment and payrolls. The code should, it was estimated, further increase factory employment about 8.8 per cent and payrolls about 2.7 per cent over June, 1933. The code will become effective on May 16. The code was approved on condition that the Associated Builders of Small Locomotives shall amend its articles of association to the satisfaction of the National Recovery Administration.

### OBITUARY

**George P. Nichols**, who died in Milwaukee, Wis., on May 1 as reported in the *Railway Age* of May 5, was born in Grafton, Mass., on March 29, 1862, and graduated from Worcester (Mass.) Polytechnic institute in 1883. In the same year he entered the employ of the Rhode Island Locomotive Works as construction engineer, which position he held until 1884, when he entered the employ of Brown & Sharp, Providence, R. I. In the same year he became construction engineer for the Thomson Houston Electric Company and when this company was merged with the General



George P. Nichols

Electric Company in 1890, he was placed in charge of the power department, which position he held until 1894. In the latter year, he and his brother, Samuel F. Nichols, organized the firm of George P. Nichols & Brother, Chicago, to manufacture electric transfer tables, and turntable trucks and tractors, in which business he was engaged until 1926, when he retired from active participation in the partnership. Mr. Nichols had been a member of the Western Society of Engineers for 40 years and of the Chicago Engineers Club for 30 years, being one of the charter members in the latter organization.

## Construction

**ATCHISON, TOPEKA & SANTA FE—SOUTHERN PACIFIC—UNION PACIFIC.**—A contract for the placing of 50,000 cu. yd. of embankment on the site of the proposed union passenger terminal in the Plaza area of Los Angeles, Cal., has been awarded to Myers & Co., Los Angeles, and the work is now under way.

**BESSEMER & LAKE ERIE.**—This company plans to replace the wood deck of its Allegheny river bridge at River Valley, Pa., with a steel and concrete deck and install GEO type track on the bridge. The estimated cost of the work is \$194,200. The American Bridge Company will furnish and erect the steel. This road will also carry out work with its own forces on an overhead highway bridge at McBride, Pa., at a cost of \$62,560; the American Bridge Company will furnish the steel. The above involves the use of 1,525 tons of structural steel and 200 tons of rail.

**CHICAGO & NORTH WESTERN.**—A contract has been awarded to the Jutton-Kelly Company, Milwaukee, Wis., for the construction of a highway subway under this company's tracks near Duck Creek, Wis., at a cost of about \$45,000. The structure will consist of a 68-ft. deck plate-girder ballasted-deck span on concrete abutments.

**MINNEAPOLIS, ST. PAUL & SAULT STE MARIE.**—The Illinois State Highway department has awarded a contract to the Ellington-Miller Company, Chicago, for the construction of a subway to carry Higgins road under the tracks of the Soo Line at Orchard Place, near Chicago.

**NATIONAL RAILWAYS OF MEXICO.**—A committee of five engineers has been appointed to make an aerial inspection of the proposed route for a new railway line between Mogone, Oax., on the National of Mexico, and Campeche, Cam., on the United Railways of Yucatan, a distance of about 450 miles. Funds for the construction of this line were appropriated in 1931 by the federal government of Mexico and the state governments of Tabasco and Campeche but actual construction of the line has been delayed.

**NEW YORK CENTRAL.**—The New Jersey Board of Public Utility Commissioners has issued a new order directing that work shall be started by July 15, and completed within nine months, on the elimination of the West Shore crossing of Fort Lee road in the Borough of Bogota, County of Bergen, N. J.

**PENNSYLVANIA-ERIE.**—The New York Public Service Commission has approved specifications and an estimate of cost of \$232,400, exclusive of land and property damages, for the elimination of the crossing of the Pennsylvania and the Erie railroads on the Olean-Allegany county highway in the Village of Allegany, Cattaraugus county, N. Y. The commission also authorized the Erie to do certain work in connection with the elimination at actual cost by direct employment of labor and purchase of materials for \$29,000.

## Financial

**AHUKINI TERMINAL & R. R.—Abandonment.**—The Interstate Commerce Commission has authorized this company to abandon its entire line extending from Ahukini Wharf, Hawaii, to Nawiliwili Wharf, 4.4 miles, and operation under trackage rights over a line owned by the Lihue Plantation Company, between Nawiliwili Junction and Lihue Mill, 2 miles.

**ALABAMA GREAT SOUTHERN.—Annual Report.**—The 1933 annual report of this company shows net income, after interest and other charges, of \$484,467, as compared with net deficit of \$408,499 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$4,497,665	\$4,090,650	+\$407,015
Maintenance of way	569,816	640,659	-70,843
Maintenance of equipment	1,018,176	1,244,525	-226,349
Transportation	1,485,642	1,531,962	-46,320
TOTAL OPERATING EXPENSES	3,387,462	3,783,412	-395,950
Operating ratio	75.32	92.49	-17.17
NET REVENUE FROM OPERATIONS	1,110,202	307,237	+802,965
Railway tax accruals	418,456	414,941	-3,515
Hire of equipment—Cr.	101,411	99,830	+1,581
Joint facility rents	130,743	117,478	+13,265
OPERATING INCOME	661,537	*125,808	+787,345
Non-operating income	335,512	250,057	+85,455
GROSS INCOME	997,049	124,249	+872,800
Rent for leased roads	19,635	19,635	.....
Interest on funded debt	423,840	423,840	.....
TOTAL DEDUCTIONS FROM GROSS INCOME	475,062	485,222	-10,160
NET INCOME	\$484,467	*\$408,499	+\$892,966

\* Deficit.

**ATLANTA, BIRMINGHAM & COAST.—Annual Report.**—The 1933 annual report of this road shows net deficit, after interest and other charges, of \$223,374, as compared with net deficit of \$801,898 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$2,604,544	\$2,413,794	+\$190,750
TOTAL OPERATING EXPENSES	2,578,042	2,998,945	-420,903
Operating ratio	98.98	124.22	.....
NET REVENUE FROM OPERATIONS	26,502	*585,151	+611,653
Railway tax accruals	154,169	159,846	-5,677
Railway operating income	*129,592	*745,344	+615,752
Hire of equipment—Dr.	111,584	96,408	+15,176
Joint facility rents—Net Dr.	9,669	11,168	-1,499

Non-operating income	48,863	60,806	-11,943
GROSS INCOME	*80,730	*684,539	+603,809
Rent for leased roads	50	.....	+50
Interest on funded debt	2,057	.....	+2,057
TOTAL DEDUCTIONS FROM GROSS INCOME	142,644	117,359	+25,285
BALANCE CARRIED TO PROFIT AND LOSS	*\$223,374	*\$801,898	+578,524

\* Deficit.

**CANADIAN NATIONAL.—Auditors Urge Reduction of Capitalization.**—The auditors' report on this company's operations, urging a change in its capital structure, has been tabled in the House of Commons at Ottawa. The report says: "It is necessary to take into account the psychologically depressing and destructive effect on the whole morale of the investing and general public because of the continued presentation of a top-heavy and partially depleted shareholders' capital structure and annual net income results burdened with interest charges by the controlling shareholder for monies advanced to replace impaired capital. It is our opinion that present governmental liability structure of the National System conveys particularly to the investing public, a picture which magnifies the actual difficulties, great as they are, in which the Dominion of Canada finds itself in respect of its nationally owned railways."

The report recommends an adjustment which would face "the fact of lost capital as many unfortunate shareholders in industrial and financial enterprises with excessive capital structures have been forced to do during the last three or four years in order to salvage their depleted equities to the best advantage through the protection of their financial and credit position with the public. As a means of understanding correctly the situation, the report states, it is "necessary to remember that the Canadian National System as an operating entity was bankrupt when brought into being."

Among the adjustments recommended is writing down the stock of the Canadian Northern from \$100,000,000 to \$18,000,000; wiping out Grand Trunk stock totaling \$165,627,738 and reducing the investment account by the same amount; writing out the government advances for deficits totaling \$324,074,527; eliminating from the accounts \$15,142,633 of government grants in aid of construction of the Grand Trunk; and explanatory text so that the public may have a correct understanding of the relationship between the accounts of the railway and the public accounts of the government.

**CANADIAN PACIFIC.—D. S. S. & A. Abandonment and Trackage.**—The Interstate Commerce Commission has authorized the Duluth, South Shore & Atlantic to abandon its line from Marengo, Wis., to a connection with the Chicago, St. Paul, Minneapolis & Omaha at Allouez, 73.5 miles, and to operate under trackage rights over the Northern Pacific from Superior

to Ashland, 63.9 miles, and over the Wisconsin Central from Marengo to Ashland, 12.1 miles, and to construct a connecting track 3,375 ft. in length between its line and the Wisconsin Central at Marengo.

**CHICAGO, ROCK ISLAND & PACIFIC.—Annual Report.**—The 1933 annual report of this company shows net deficit, after interest and other charges, of \$11,055,216, as compared with net deficit of \$9,956,800 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$64,848,448	\$70,780,027	-\$5,931,579
Maintenance of way	6,939,186	6,730,416	+208,770
Maintenance of equipment	13,816,069	13,821,332	-5,263
Transportation	25,473,852	28,802,295	-3,328,443
TOTAL OPERATING EXPENSES	52,435,395	56,341,423	-3,906,028
Operating ratio	80.86	79.60	+1.26
NET REVENUE FROM OPERATIONS	12,413,053	14,438,604	-2,025,551
Railway tax accruals	5,340,000	5,890,000	-550,000
Railway operating income	7,050,459	8,525,472	-1,475,013
Equipment rents—Dr.	2,966,643	3,303,035	-336,392
Joint facility rents—Dr.	1,086,250	1,174,208	-87,958
NET RAILWAY OPERATING INCOME	2,997,566	4,048,229	-1,050,663
Non-operating income	647,179	507,769	+139,410
GROSS INCOME	3,644,746	4,555,999	-911,253
Rent for leased roads	155,286	155,286	.....
NET INCOME (Deficit)	\$11,055,216	\$9,956,801	+\$1,098,415

**CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—Annual Report.**—The 1933 annual report of this company shows net income, after interest and other charges, of \$1,863,173, as compared with net income of \$296,546 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$11,622,730	\$10,126,102	+\$1,496,628
Maintenance of way	1,184,450	1,321,142	-136,692
Maintenance of equipment	2,133,538	2,728,989	-595,451
Transportation	2,965,887	2,949,157	+16,730
TOTAL OPERATING EXPENSES	7,050,143	7,851,083	-800,940
Operating ratio	60.66	77.53	-16.87
NET REVENUE FROM OPERATIONS	4,572,587	2,275,019	+2,297,568
Railway tax accruals	897,747	620,019	+277,728
Hire of Equipment	192,567	*148,554	+341,121
Joint facility rents	125,575	65,708	+59,708
RAILWAY OPERATING INCOME	3,354,223	1,737,110	+1,617,113
Non-operating income	237,169	295,064	-57,895
GROSS INCOME	3,591,392	2,032,175	+1,559,217
Rent for leased roads	1,645,948	1,636,575	-9,373

TOTAL DEDUCTION FROM GROSS INCOME	1,728,219	1,735,629	-7,410
NET INCOME	\$1,863,173	\$296,546	+\$1,566,626

\* Credit.

**DENVER & SALT LAKE.—Annual Report.**—The 1933 annual report of this company shows net income, after interest and other charges, of \$4,146, as compared with net income of \$3,946 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$1,657,331	\$1,915,469	-\$258,138
Maintenance of way	214,820	246,893	-32,073
Maintenance of equipment	276,358	294,125	-17,767
Transportation	301,981	321,236	-19,256
TOTAL OPERATING EXPENSES	889,160	979,699	-90,540
NET REVENUE FROM OPERATIONS	768,172	935,769	-167,598
Railway tax accruals	166,811	162,176	+4,636
Hire of equipment—Net	110,290	38,980	-71,310
NET RAILWAY OPERATING INCOME	711,348	812,425	-101,077
Total Operating and Other Income	845,328	974,137	-128,809
Rent for leased roads	403,278	397,020	+6,258
Interest on funded debt	425,000	562,500	-137,500
TOTAL DEDUCTIONS FROM GROSS INCOME	841,181	970,191	-129,009
NET INCOME	\$4,146	\$3,946	+\$200

**ESCANABA, IRON MOUNTAIN & WESTERN.—P. W. A. Loan.**—This company has applied to the Interstate Commerce Commission for approval of the expenditure of \$3,500,000 allotted by the Public Works Administration for the construction of an ore dock at Escanaba, Wis.

**FLORIDA EAST COAST.—Annual Report.**—The 1933 annual report of this road shows net deficit, after interest and other charges, of \$3,185,635, compared with a net deficit of \$3,316,630 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	839.14	858.83	-19.69
RAILWAY OPERATING REVENUES	\$6,693,546	\$6,720,794	-\$27,248
Maintenance of way	1,287,840	1,301,742	-13,901
Maintenance of equipment	1,564,765	1,612,033	-47,268
Transportation—Rail	1,931,930	1,987,903	-55,973
TOTAL OPERATING EXPENSES	5,538,937	5,701,051	-162,113
Operating ratio	82.8	84.8	-2.0
NET REVENUE FROM OPERATIONS	1,154,608	1,019,743	+134,865
Railway tax accruals	859,567	866,626	-7,059
Railway operating income	294,239	153,044	+141,195
Equipment rents—Net Dr.	383,584	386,015	-2,431
Joint facility rents—Net Dr.	45,566	48,805	-3,239



NET RAILWAY OPERATING INCOME	*134,910	*281,776	+146,865
Non-operating income	75,113	97,852	-22,739
GROSS INCOME	*59,797	*183,924	+124,126
Interest on funded debt	3,027,447	3,027,767	-320
TOTAL DEDUCTIONS FROM GROSS INCOME	3,125,837	3,132,707	-6,869
NET INCOME (Deficit)	\$3,185,635	\$3,316,630	-\$130,995

\* Deficit.

GEORGIA SOUTHERN & FLORIDA.—*Annual Report.*—The 1933 annual report of this company shows net deficit, after interest and other charges, of \$277,286, as compared with net deficit of \$109,266 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
RAILWAY OPERATING REVENUES	\$1,634,447	\$1,876,618	-\$242,171
Maintenance of way	284,210	348,631	-64,421
Maintenance of equipment	400,687	493,572	-92,885
Transportation	686,278	653,112	+33,166
TOTAL OPERATING EXPENSES	1,442,247	1,574,239	-131,992
Operating ratio	88.24	83.89	+4.35
NET REVENUE FROM OPERATIONS	192,199	302,379	-110,180
Railway tax accruals	143,420	174,289	-30,869
Hire of equipment	7,347	*72,132	+79,479
Joint facility rents	2,452	*5,594	+8,046
OPERATING INCOME	38,440	205,525	-167,085
Non-operating income	9,752	14,649	4,897
GROSS INCOME	48,192	220,174	171,982
Interest on funded debt	295,915	297,295	+1,380
TOTAL DEDUCTIONS FROM GROSS INCOME	325,478	329,441	-3,963
DEFICIT AFTER CHARGES	\$277,286	\$109,266	+\$168,020

\* Credit

ILLINOIS CENTRAL.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Crain, Ill., to Sand Ridge, 17.42 miles.

ILLINOIS CENTRAL.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue \$12,500,000 of three-year 6 per cent notes to be delivered to the holders of the three-year 4½ per cent notes that mature June 1 for 62½ per cent of their holdings, the 37½ per cent to be paid in cash.

KANSAS CITY SOUTHERN.—*New Directors.*—At the annual meeting of this company this week the following new directors were elected: E. M. Allen, president of the Mathieson Alkali Works, T. L. Chadbourne, lawyer of New York, R. C. Kemper, banker of Kansas City, and Sir William Wiseman, a partner of Kuhn,

Loeb & Co., bankers of New York. These directors succeed W. C. Laree, John McHugh, Andrew J. Miller and M. B. Starring, the latter being deceased.

KANSAS CITY SOUTHERN.—*Annual Report.*—The 1933 annual report of this company shows net deficit, after interest and other charges, of \$1,244,546, as compared with net deficit of \$1,380,759 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	882.81	882.81	.....
RAILWAY OPERATING REVENUES	\$9,362,763	\$9,875,437	-\$512,674
Maintenance of way	951,115	1,019,372	-68,257
Maintenance of equipment	1,639,524	1,642,731	-3,207
Transportation	2,872,492	3,246,759	-374,267
TOTAL OPERATING EXPENSES	6,840,697	7,411,816	-571,119
Operating ratio	83.03	85.41	-2.38
NET REVENUE FROM OPERATIONS	2,522,066	2,463,621	+58,444
Railway tax accruals	933,440	1,023,125	-89,685
Railway operating income	1,586,111	1,437,671	+148,440
Equipment rents—Net Dr.	345,255	403,109	-57,854
Joint facility rents—Net Dr.	79,182	76,629	+2,553
NET RAILWAY OPERATING INCOME	1,161,674	957,933	+203,741
Non-operating income	719,430	931,454	-212,024
GROSS INCOME	2,305,541	2,369,124	-63,583
Rent for leased roads	168,962	166,367	+2,595
Interest on funded debt	2,690,101	2,700,420	-10,329
TOTAL DEDUCTIONS FROM GROSS INCOME	3,550,087	3,749,883	-199,796
NET INCOME (DEFICIT)	\$1,244,546	\$1,380,759	-\$136,213

MINNEAPOLIS & ST. LOUIS.—*Reorganization.*—Federal Judge Wilbur F. Booth at Minneapolis, Minn., on May 3, took under advisement a proposal to borrow \$3,000,000 of R. F. C. bonds and reorganize the Minneapolis & St. Louis, which has been in receivership for the last 11 years. The court also took under advisement the proposal of preferred creditors to have the road sold in order to meet claims approximating \$1,700,000. The judge stated that he was anxious to terminate the receivership, but indicated that no decision will be handed down prior to completion of an investigation of the road by the Reconstruction Finance Corporation.

MISSOURI PACIFIC.—*Impoundment of Income.*—Arguments on a proposed impoundment of the Missouri Pacific's income subject to the mortgage lien of the St. Louis Iron Mountain & Southern first mortgage bonds and also the validity of the gold clause contained therein were heard by Federal Judge Faris in St. Louis, Mo., on May 11.

MISSOURI SOUTHERN.—*P. W. A. Loan.*—This company has applied to the Interstate Commerce Commission for authority for the expenditure of \$54,000 for a Diesel-

electric locomotive on which it is proposed to borrow \$36,000 from the Public Works Administration.

NEW PARK & FAWN GROVE.—*Abandonment.*—This company and the Stewartstown have applied to the Interstate Commerce Commission for authority to abandon the line of the latter company from Stewartstown, Pa., to New Park, 9 mi.

NORTHERN PACIFIC.—*Annual Report.*—The 1933 annual report of this company shows net income, after interest and other charges, of \$303,979, as compared with net deficit of \$1,991,406 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	6,740.59	6,735.58	+5.01
RAILWAY OPERATING REVENUES	\$47,578,677	\$47,084,176	+\$494,500
Maintenance of way	5,180,413	5,736,210	-555,798
Maintenance of equipment	10,877,086	11,481,244	-604,158
Transportation—Rail	17,630,188	18,566,525	-936,337
TOTAL OPERATING EXPENSES	38,993,492	41,433,180	-2,439,687
Operating ratio	81.96	88.00	-6.04
NET REVENUE FROM OPERATIONS	8,585,184	5,650,997	+2,934,187
Railway tax accruals	5,883,251	6,677,355	-794,104
Railway operating income	2,678,086	*1,049,567	+3,727,653
Equipment rents—Net	729,898	573,561	+156,336
Joint facility rents—Net	2,567,989	2,466,395	+101,594
NET RAILWAY OPERATING INCOME	5,975,973	1,990,389	+3,985,583
Non-operating income	8,892,909	10,603,628	-1,710,719
GROSS INCOME	14,868,881	12,594,017	+2,274,865
Rent for leased roads	51,419	51,419	.....
Interest on funded debt	14,241,028	14,264,259	-23,231
NET INCOME	\$303,979	*\$1,991,406	+\$2,295,385

\* Deficit.

PENNSYLVANIA.—*P. B. & W. Bonds.*—The Interstate Commerce Commission has authorized the Philadelphia, Baltimore & Washington to reduce the interest rate of \$12,929,000 of its general mortgage series D bonds from 5 per cent to 4½ per cent and the Pennsylvania has been authorized to guarantee the bonds and sell them to Kuhn, Loeb & Co. at 99½ per cent, making the annual cost to the railroad 4.526 per cent.

PENNSYLVANIA, OHIO & DETROIT.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to reduce the interest rate on \$3,943,000 of first and refunding 5 per cent bonds to 4½ per cent, and the Pennsylvania has applied for authority to guarantee the bonds and to sell them to Kuhn, Loeb & Co., at 98.5.

ST. LOUIS SOUTHWESTERN.—*New Directors.*—Paul J. Longua and B. C. Day, both of New York, have been elected directors of this company to replace Walter E. Meyer and Walter Douglas.

SIERRA.—*Trackage Rights.*—This company has applied to the Interstate Com-

merce Commission for authority to operate under trackage rights over the private carrier trackage of the city and county of San Francisco, Calif., known as the Hetch-Hetchy Railway, for a distance of 59 mi.

**TABOR & NORTHERN.—Abandonment.**—This company has applied to the Interstate Commerce Commission for authority to abandon its entire line from Tabor, Ia., to Malvern, 8.6 mi.

**WABASH.—Annual Report.**—The 1933 annual report of this company shows net deficit, after interest and other charges, of \$4,823,058, as compared with net deficit of \$6,673,695 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	2,471.97	2,520.87	—48.90
RAILWAY OPERATING REVENUES	\$36,207,016	\$37,785,634	—\$1,578,617
Maintenance of way	4,360,051	4,602,831	—242,781
Maintenance of equipment	6,148,120	6,255,128	—107,008
Transportation—Rail	13,977,602	15,991,915	—2,014,314
TOTAL OPERATING EXPENSES	27,577,369	30,684,901	—3,107,532
NET REVENUE FROM OPERATIONS	8,629,647	7,100,732	+1,528,915
Railway tax accruals	1,817,106	2,387,722	—570,616
Railway operating income	6,803,658	4,692,397	+2,111,261
Hire of freight cars—Dr.	2,421,493	2,568,284	—146,791
Joint facility rents—Net	1,640,091	1,610,240	+29,851
NET RAILWAY OPERATING INCOME	2,745,490	524,669	+2,220,821
Non-operating income	523,423	845,382	—321,959
GROSS INCOME	3,268,912	1,370,051	+1,898,862
Rent for leased roads	356,956	354,940	+2,016
Interest on funded debt	7,046,640	6,826,755	+219,885
TOTAL DEDUCTIONS FROM GROSS INCOME	8,091,970	8,043,746	+48,224
NET INCOME (DEFICIT)	\$4,823,058	\$6,673,695	—\$1,850,637

**WESTERN MARYLAND.—Annual Report.**—The 1933 annual report of this company shows net income, after interest and other charges, of \$936,051, as compared with net income of \$612,893 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	891.79	891.73	+0.06
RAILWAY OPERATING REVENUES	\$12,345,048	\$12,081,684	+\$263,364
Maintenance of way	1,583,674	1,419,684	+163,990
Maintenance of equipment	2,301,643	2,110,688	+190,955
Transportation	3,119,418	3,149,717	—30,299
TOTAL OPERATING EXPENSES	7,845,337	7,521,365	+323,972
Operating ratio	63.55	62.25	+1.30
NET REVENUE FROM OPERATIONS	4,499,711	4,560,319	—60,608
Railway tax accruals	736,550	780,213	—43,664

Railway operating income	3,760,567	3,776,999	—16,432
Hire of equipment—Net	453,833	123,690	+330,143
Joint facility rents—Net	154,198	185,826	—31,628

NET RAILWAY OPERATING INCOME	4,060,202	3,714,863	+345,339
Non-operating income	142,112	138,726	+3,386

GROSS INCOME	4,202,315	3,853,590	+348,725
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Rent for leased roads	56,749	51,330	+5,419
Interest on funded debt	2,705,101	2,674,188	+30,913

TOTAL DEDUCTIONS FROM GROSS INCOME	3,266,264	3,240,697	+25,567
NET INCOME	\$936,051	\$612,893	+\$323,158

**WESTERN PACIFIC.—Annual Report.**—The 1933 annual report of this road shows net deficit, after interest and other charges, of \$2,087,808, as compared with net deficit of \$2,230,177 in 1932. Selected items from the income statement follow:

	1933	1932	Increase or Decrease
Average Mileage Operated	1,776.17	1,772.21	+3.96
RAILWAY OPERATING REVENUES	\$10,868,312	\$10,768,713	+\$99,599

Maintenance of way	1,658,774	1,331,849	+326,924
Maintenance of equipment	1,895,711	1,866,730	+28,980
Transportation—Rail	3,901,746	4,331,602	—429,856

TOTAL OPERATING EXPENSES	8,818,306	9,031,922	—213,615
Operating ratio	81.14	83.87	—2.73

NET REVENUE FROM OPERATIONS	2,050,006	1,736,791	+313,215
Railway tax accruals	851,195	998,027	—146,832

Railway operating income	1,198,112	736,687	+461,424
Equipment rents—Net	472,123	398,588	—73,535
Joint facility rents—Net	179,839	180,017	—179

Non-operating income	1,828,967	1,890,832	—61,865
GROSS INCOME	3,027,079	2,627,520	+399,559

Rent for leased roads	3,600	3,600	.....
Interest on funded debt	3,385,979	3,128,574	+257,405

TOTAL DEDUCTIONS FROM GROSS INCOME	5,114,887	4,857,697	+257,190
NET INCOME (DEFICIT)	\$2,087,808	\$2,230,177	—\$142,369

### Average Prices of Stocks and of Bonds

	May 8	Last week	Last year
Average price of 20 representative railway stocks.	42.68	45.00	31.82
Average price of 20 representative railway bonds.	79.08	79.95	60.31

### Dividends Declared

Catawissa.—First and Second Preferred, \$1.25, semi-annually, payable May 22 to holders of record May 10.

Erie & Pittsburgh.—7 Per Cent Guaranteed, 87½c, quarterly, payable June 1 to holders of record May 31.

Mobile & Birmingham.—4 Per Cent Guaranteed, \$2.00, semi-annually, payable July 2 to holders of record June 1.

Virginian.—Preferred Accumulative, \$1.50, payable June 1 to holders of record May 15. This payment clears up the accrual brought about by the change of payments from semi-annual to quarterly with the February 1, 1932, payment.

## Railway Officers

### EXECUTIVE

**Carl Bucholtz**, vice-president and general manager of the Virginian, with headquarters at Norfolk, Va., has been elected president of that company, with the same headquarters, to succeed **C. H. Hix**, who died last December.

**Alistair Fraser**, who has served as acting vice-president, traffic department, of the Canadian National since October, 1932, has been appointed traffic vice-president, with headquarters in Montreal. Mr. Fraser was born at New Glasgow, N. S. He was admitted to the bar in 1911 and was made King's Counsel in 1921. He practiced law in eastern and western Canada until the outbreak of the World War, when he enlisted and served with the 17th Battalion, C.E.F., the Princess Patricia's Canadian Light Infantry and the 15th Battalion. In 1919 he entered the service of the Canadian National as general solicitor and in 1923



Alistair Fraser

he was appointed commission counsel, in which capacity he represented the company before the Board of Railway Commissioners of Canada and the Interstate Commerce Commission of the U. S. in all important cases, including many problems connected with the handling and shipment of freight. In 1929 Mr. Fraser was appointed assistant general counsel, continuing his duties as representative of the System before the Railway Commission until his appointment as acting vice-president in October, 1932. During the period Mr. Fraser served as acting vice-president he took a keen interest in the development of door-to-door freight shipment and the speeding up of freight deliveries.

### FINANCIAL, LEGAL AND ACCOUNTING

**George Craig** has been elected assistant treasurer of the Lehigh & New England with headquarters at Philadelphia, Pa., to succeed **O. E. Neff**, deceased.

**N. E. Fowler** has been appointed auditor and general freight and passenger agent

Continued on next left-hand page



# Pounds or Performance?



● SUPER-POWER LOCOMOTIVES ON THE BOSTON AND MAINE

THERE was a time when weight and traction was everything in a locomotive. If a train could be started, if it could get over the worst grades, the locomotive did all that was required.

In present-day railroading there is no room for such "slow drags". Locomotive performance, measured in gross ton miles per hour, is the governing factor.

The demand now is for maximum power per pound of metal and per pound of fuel burned.

Super-Power Locomotives justify their purchase on this basis. Their increased earning power is making remarkable economies on many leading railroads.



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of the Copper Range, with headquarters at Houghton, Mich.

**H. M. Moors**, freight claim agent for the Southern Pacific Lines in Texas and Louisiana, with headquarters at New Orleans, La., has been appointed to the newly-created position of general freight claim agent, with headquarters at Houston, Tex. Mr. Moors will have general charge of the freight claim department, and will have such other duties as may be assigned to him from time to time by the vice-president and general manager. **C. G. Webb**, freight claim agent, at Houston, with jurisdiction over the Texas lines, has had his jurisdiction extended to include the lines in Louisiana. **O. L. Hingle** has been appointed to the newly-created position of assistant freight claim agent at New Orleans.

## OPERATING

**M. K. Buckley**, assistant superintendent of transportation of the Chicago, Milwaukee, St. Paul & Pacific, Eastern lines, and **C. H. Winter**, a special representative in the office of the general superintendent of transportation, have both been appointed to the newly-created position of assistant to the general superintendent of transportation, with headquarters as before at Chicago. Mr. Winter will have jurisdiction over freight matters, while, as in the past, Mr. Buckley will have supervision over passenger affairs. **H. G. Fowler**, superintendent of transportation of the Eastern lines, with headquarters at Chicago, has been granted an indefinite leave of absence because of ill health.

**Pablo M. Hernandez**, has been temporarily appointed superintendent of the Gulf division of the National Railways of Mexico, with headquarters at Monterey, N. L., succeeding **Samuel Cantu**, who has been transferred to the Guadalajara division, with headquarters at Guadalajara, Jal., to replace **M. Ramirez**, who has been granted a leave of absence. **Juan Mejia**, superintendent of the Torreon division, with headquarters at Torreon, Coah., has been transferred to the Queretaro division, at Queretaro, Qro., succeeding **B. Ortega**, who has resigned. **Alfonso E. Plancarte** has been appointed superintendent of the Southeastern division, with headquarters at Tierra Blanca, Ver., succeeding **J. I. Garcia**, who has been transferred to the Torreon division to succeed Mr. Mejia.

## TRAFFIC

**P. C. Lang** has been appointed general northwestern agent of the Louisiana & Arkansas and the Louisiana, Arkansas & Texas, with headquarters in Kansas City, Mo., succeeding **W. D. Burch**, resigned.

**T. C. McDowell** has been appointed district agent of the Seaboard Air Line with jurisdiction over freight traffic solicitation in the Tampa (Fla.) territory. The position of general agent, held by the late **W. A. Fulwiler** has been abolished.

**A. H. Seaver**, assistant passenger traffic manager of the New York, New Haven & Hartford, with headquarters at Boston,

Mass., has been appointed passenger traffic manager, with the same headquarters, to succeed **F. C. Coley**, who died on May 1.

**H. H. Riddle**, a commercial agent for the Kansas City Southern at San Antonio, Tex., has been promoted to general agent at Beaumont, Tex., succeeding **F. H. Strong**, who has been transferred to New Orleans, La., to replace **J. S. Houston**, deceased.

**C. L. Butler**, a commerce clerk on the Missouri Pacific, at St. Louis, Mo., has been promoted to assistant general freight agent, with the same headquarters. **A. Kuepfert** has also been appointed assistant general freight agent at St. Louis, succeeding **P. J. McCarty**, deceased. **A. O. Selover**, chief clerk to the general live stock agent at Kansas City, Mo., has been promoted to assistant live stock agent with the same headquarters, succeeding **E. G. Popkess**, who has been appointed special representative with headquarters at East St. Louis, Ill.

## ENGINEERING AND SIGNALING

**L. H. Hornsby** has been appointed assistant engineer bridges for the Seaboard Air Line, with headquarters at Norfolk, Va., succeeding **J. B. McClain**, deceased.

**George K. Thomas**, assistant signal engineer of the Atchison, Topeka & Santa Fe System, has been appointed signal engineer, with headquarters as before at Topeka, Kan., succeeding **T. S. Stevens**, deceased. Mr. Thomas was born in Castle-townroche county, Cork, Ireland, in 1887, and was educated in London, England, where he was graduated from Central Technical college in 1908, with the degree of electrical engineer. He came to the United States in 1909 and in the same year entered the service of the Santa Fe as a signal laborer. Later in the year he became a student apprentice in the signal department, working as a draftsman and

as a signalman on various signal construction projects. From 1909 to 1911 he served as a signal maintainer at Florence, Kan., Chillicothe, Ill., and Holiday, Kan. In the later year he was advanced to division signal foreman, and in 1913 he was ap-



George K. Thomas

pointed chief draftsman of the Eastern lines at Topeka. In the following year Mr. Thomas was appointed assistant signal engineer of the system at Topeka, in which capacity he served until his recent appointment, effective May 1.

## OBITUARY

**J. M. Condon**, assistant vice-president of the Erie, with headquarters at Cleveland, Ohio, died at his home in that city on May 9.

**Fred T. Horton**, assistant comptroller of subsidiary companies of the Canadian National at Montreal, Que., who retired on January 1 because of ill health, died in Detroit, Mich., on May 4. Mr. Horton was born in Derby, England, on October 29, 1873. Upon coming to the United States in 1893 he entered the service of the Chicago, Burlington & Quincy as audit office clerk, in which position he served until 1895, when he became station agent for the Elgin, Joliet & Eastern. From 1892 to 1902, he was traveling auditor for the Chicago, Hammond & Western (Chicago Junction), and from the latter date until March, 1914, he served as secretary to the president of the Chicago Junction Railway. Mr. Horton was field accountant for the Interstate Commerce Commission at Chicago from March, 1914, until July, 1918, when he entered the service of the Pere Marquette as auditor of station accounts. In October, 1918, he was appointed general accountant for the same road and in September, 1919, he became federal auditor of the Grand Trunk Western Lines. Upon the termination of federal control, Mr. Horton continued with the Grand Trunk Western as auditor, remaining in that position until June, 1930, at which time he was promoted to the position of assistant comptroller of subsidiary companies of the Canadian National at Montreal.

**Joseph H. McCabe**, assistant freight traffic manager of the Atchison, Topeka

(Continued on page 724)

### Action, Not More Research, the Crying Need

The Co-ordinator of Transportation and committees of railroad men working with him have considered hundreds of projects for reducing the cost of carrier operation through co-operation between individual lines. During the next year Mr. Eastman will doubtless study additional projects of the kind, as well as other aspects of railroad operation where economies may be effected. But the crying need is for more action, rather than further research. Therefore, it is up to Congress to adopt a more aggressive policy toward the transportation problem, and enact the additional legislation needed to implement the co-ordination program which Mr. Eastman has ably outlined in his reports. Only in this way can the reduction in railroad costs be effected which is necessary to assure needed relief both to security holders and to shippers.

From the Journal of Commerce (N. Y.)





*Use Modern Standards  
in Designing New Power*

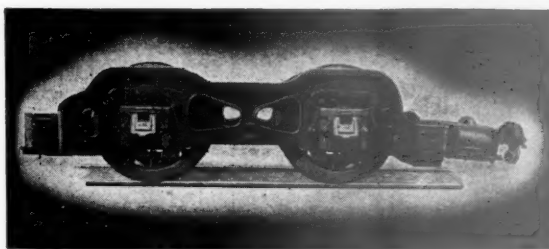


## Ordering Duplicates of 10 Year Old Designs Places New Locomotives Under a Handicap

Obsolescence determines the effective life of equipment. If the art of ten years ago is used as the basis for designing new locomotives, there is ten years' obsolescence before the equipment ever goes to work.

When purchasing new locomotives for any service, determine the power requirements for both high and low speeds, then meet these requirements with an engine having the minimum weight on drivers. Include The Locomotive Booster as an integral part of the design.

Compared with non-Booster engines for the same requirements, there is a substantial saving in maintenance expense as well as first cost, because you can have a smaller cylinder and do the same work.



# FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK

CHICAGO

MONTREAL

# Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1934

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1934															
Name of road	Av. mileage operated during period	Operating revenues				Maintenance of—			Operating expenses			Operating ratio	Net from railway operation	Net ry. operating income, 1933	
		Freight	Passenger	Total	(inc. misc.)	Way and structures	Equip-ment	Traffic	Trans-portion	General	Total				
Alton, Canton & Youngstown.....	March 171	\$167,514	\$20	\$180,202	\$21,199	\$12,746	\$7,234	\$46,911	\$7,373	\$95,463	53.0	\$84,739	\$73,538	\$55,530	\$1,588
Alton, Canton & Youngstown.....	3 mos. 171	428,826	93	429,799	47,652	35,700	22,519	135,096	22,846	263,813	57.6	194,550	162,201	115,839	24,915
Alton, Canton & Youngstown.....	March 930	741,276	126,826	1,037,790	97,189	173,208	42,227	436,990	39,247	800,808	77.2	236,982	163,872	38,469	28,549
Alton, Canton & Youngstown.....	3 mos. 930	2,068,877	372,101	2,887,534	263,326	447,091	134,009	1,250,324	144,020	2,273,231	78.7	614,303	399,780	28,549	28,549
Atchison, Topeka & Santa Fe.....	March 9,550	7,037,058	816,191	8,674,550	996,268	2,168,775	302,513	2,978,267	340,986	6,790,122	78.3	1,884,428	1,101,156	1,152,945	327,824
Atchison, Topeka & Santa Fe.....	3 mos. 9,551	18,407,319	2,504,278	23,107,554	2,566,824	6,042,777	899,783	8,508,102	1,070,116	19,096,419	82.6	4,011,135	1,677,570	1,840,612	200,624
Atchison, Topeka & Santa Fe.....	March 1,918	794,593	41,557	919,267	175,067	253,378	48,003	368,455	61,605	906,461	98.6	12,806	69,868	146,930	341,991
Atchison, Topeka & Santa Fe.....	3 mos. 1,918	2,295,412	118,231	2,635,749	458,618	752,280	144,241	1,086,646	193,658	2,635,260	100.0	489	247,472	501,865	603,783
Panhandle & Santa Fe.....	March 1,878	621,245	25,550	695,748	80,667	160,604	17,297	297,203	31,660	497,410	71.5	198,338	154,016	78,684	99,877
Panhandle & Santa Fe.....	3 mos. 1,878	1,682,206	68,324	1,866,904	227,337	453,416	52,302	707,346	96,284	1,419,838	75.2	467,066	334,211	107,444	103,182
Panhandle & Santa Fe.....	March 93	95,428	15,691	131,728	19,766	27,489	6,754	49,932	6,717	112,439	85.4	19,269	12,014	1,112	26,355
Atlanta & West Point.....	March 93	249,488	47,919	358,154	52,551	74,649	20,662	143,955	20,898	318,797	89.0	39,357	17,699	14,767	86,169
Western of Alabama.....	March 133	88,931	16,263	120,673	24,229	33,457	6,946	47,978	6,548	120,669	100.0	4	8,010	5,070	2,217
Western of Alabama.....	3 mos. 133	251,747	49,988	346,180	61,557	92,409	20,610	133,307	21,633	334,496	96.6	11,684	12,347	3,400	18,695
Western of Alabama.....	March 639	240,681	5,089	275,903	42,703	54,882	21,011	103,848	15,422	248,324	90.0	27,579	15,017	3,950	16,240
Atlanta, Birmingham & Coast.....	March 639	651,493	14,122	732,315	120,717	162,404	63,669	293,368	46,646	717,117	95.3	35,198	2,433	51,275	104,341
Atlantic Coast Line.....	March 5,145	3,414,394	779,804	4,799,771	462,327	670,788	114,951	1,432,317	126,429	2,868,752	60.6	1,867,019	1,266,815	1,160,226	708,243
Atlantic Coast Line.....	3 mos. 5,145	9,066,119	2,090,743	12,669,352	1,299,103	1,944,309	368,430	4,088,652	387,564	8,246,647	65.3	4,382,705	2,981,753	2,619,780	1,810,712
Atlantic Coast Line.....	March 342	198,095	1,200	204,378	23,074	26,598	5,682	38,204	4,383	117,941	57.7	86,437	69,435	66,131	35,090
Atlantic Coast Line.....	3 mos. 342	527,136	3,350	543,837	68,488	70,840	16,983	164,438	13,381	334,130	61.4	209,707	159,705	149,346	66,675
Charleston & Western Carolina.....	March 6,384	11,191,249	786,169	12,714,592	989,115	2,956,328	343,663	4,367,666	563,489	9,311,266	73.2	3,403,326	2,725,386	2,512,436	995,551
Charleston & Western Carolina.....	3 mos. 6,384	29,677,653	2,232,095	33,985,852	2,690,499	8,128,845	1,045,753	12,212,854	1,655,553	25,986,433	76.5	7,999,419	5,954,170	5,160,929	3,811,396
Charleston & Western Carolina.....	March 23	186,487	83,400	154,101	12,801	14,397	1,635	86,344	1,055	128,432	83.3	25,669	10,669	12,146	24,604
Charleston & Western Carolina.....	3 mos. 23	637,969	239,316	445,522	29,375	39,942	4,757	250,321	39,827	364,222	81.8	81,300	35,793	24,548	24,604
Staten Island Rapid Transit.....	March 603	644,314	48,616	715,114	99,528	100,801	4,437	155,511	22,440	383,325	53.6	331,789	270,017	249,825	323,300
Staten Island Rapid Transit.....	3 mos. 603	1,813,335	121,605	1,995,336	307,505	283,837	13,148	460,658	68,674	1,135,530	56.9	859,806	698,200	636,182	760,837
Staten Island Rapid Transit.....	March 225	1,079,819	2,783	1,107,771	165,110	165,110	33,470	355,806	102,870	1,467,741	132.5	359,970	397,417	317,281	442,500
Besemer & Lake Erie.....	March 225	3,414,394	779,804	4,799,771	462,327	670,788	114,951	1,432,317	126,429	2,868,752	60.6	1,867,019	1,266,815	1,160,226	708,243
Besemer & Lake Erie.....	3 mos. 225	9,066,119	2,090,743	12,669,352	1,299,103	1,944,309	368,430	4,088,652	387,564	8,246,647	65.3	4,382,705	2,981,753	2,619,780	1,810,712
Besemer & Lake Erie.....	March 225	527,136	3,350	543,837	54,848	70,840	16,983	58,204	13,381	334,130	61.4	209,707	159,705	149,346	66,675
Boston & Maine.....	March 2,044	2,862,951	582,986	4,007,690	500,546	634,957	57,966	1,570,046	169,893	2,946,051	73.5	1,061,639	883,587	723,177	309,570
Boston & Maine.....	3 mos. 2,044	7,640,181	1,803,594	10,969,517	1,474,367	1,923,210	169,245	4,522,643	500,580	8,623,893	78.6	2,345,624	1,800,488	1,267,489	931,617
Boston & Maine.....	March 280	58,481	799	1,529	10,869	3,197	3,197	34,460	7,130	68,171	107.6	4,818	9,636	18,157	20,440
Burlington-Rock Island.....	March 280	182,168	2,443	196,442	31,506	36,917	9,594	108,194	21,514	207,721	105.7	11,279	25,710	54,938	49,531
Cambria & Indiana.....	March 37	113,762	.....	113,977	4,753	41,943	396	12,878	7,572	67,542	59.26	46,435	27,568	104,777	84,645
Cambria & Indiana.....	3 mos. 37	303,653	.....	304,252	15,618	112,800	1,210	37,438	22,777	189,445	62.26	114,809	62,570	285,959	278,277
Cambria & Indiana.....	March 233	626,956	17,972	293,136	26,337	46,664	8,310	93,784	6,144	181,739	61.9	111,397	104,397	78,616	39,015
Canadian Pac. Lines in Maine.....	March 233	672,979	46,355	752,926	90,640	125,623	27,053	273,405	18,339	535,060	71.0	217,866	196,831	126,099	90,086
Canadian Pac. Lines in Maine.....	3 mos. 233	2,757,904	301,786	3,465,222	348,417	789,171	144,247	1,339,304	203,116	2,840,215	82.0	625,007	404,195	257,834	156,957
Central of Georgia.....	March 85	51,325	10,685	78,709	10,023	21,932	3,694	57,092	4,115	96,856	123.0	18,147	23,248	38,914	50,186
Central of Georgia.....	3 mos. 85	135,367	32,287	227,689	37,513	62,058	12,103	167,092	12,097	290,863	127.7	63,174	78,489	126,799	148,171
Central of Georgia.....	March 1,926	1,040,397	109,538	1,289,011	133,116	289,171	44,429	486,349	67,010	1,027,651	79.7	261,360	187,990	127,799	135,115
Central of Georgia.....	3 mos. 1,926	2,757,904	301,786	3,465,222	348,417	789,171	144,247	1,339,304	203,116	2,840,215	82.0	625,007	404,195	257,834	156,957
Central New Jersey.....	March 689	2,228,258	331,632	2,719,933	134,858	484,349	39,705	1,073,789	87,835	1,835,157	67.5	884,776	681,991	569,396	365,086
Central New Jersey.....	3 mos. 689	6,689,282	1,007,601	7,687,228	391,182	1,241,910	120,093	3,025,326	268,939	5,089,375	66.2	2,597,375	2,056,538	1,733,767	1,043,115
Central New Jersey.....	March 455	377,153	32,642	439,612	51,108	96,178	11,808	218,897	20,743	398,788	90.7	40,824	24,238	14,703	1,065
Central New Jersey.....	3 mos. 455	1,003,516	116,533	1,222,587	164,978	278,639	38,352	613,973	59,280	1,155,951	94.5	115,910	78,489	50,186	63,174
Chesapeake & Ohio.....	March 3,121	9,631,442	225,757	10,146,138	962,906	1,934,354	166,034	2,110,581	292,931	5,479,084	54.0	4,667,054	3,807,016	3,805,905	1,932,812
Chesapeake & Ohio.....	3 mos. 3,121	25,865,423	600,757	27,149,417	2,698,900	5,303,671	483,030	5,967,211	826,071	15,317,153	56.2	11,932,264	9,343,985	9,275,124	6,672,891
Chesapeake & Ohio.....	March 938	981,072	79,436	1,186,596	126,855	188,671	49,928	450,320	36,558	860,691	72.5	325,905	250,745	128,007	71,865
Chesapeake & Ohio.....	3 mos. 938	2,671,720	236,420	3,243,606	364,227	565,241	149,088	1,318,220	171,428	2,562,213	79.1	677,393	416,743	50,082	281,961



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# AMERICAN ARCH COMPANY



**INCORPORATED**

***Locomotive Combustion Specialists***

**NEW YORK**

**CHICAGO**

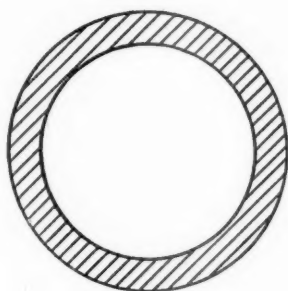
# Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Total	Net from railway operation	Operating income	Net railway operating income 1933	Net operating income 1934
		Freight	Passenger	Total	Misc.	Way and structures	Equip-ment	Traffic	Trans-portion						
Chicago, Rock Island & Pacific.....March 3 mos.	7,612	\$4,317,701	\$418,793	\$5,306,253	\$487,044	\$1,249,544	\$175,535	\$2,177,533	\$2,177,533	83.6	\$4,436,066	\$870,187	\$455,532	\$209,917	\$265,614
Chicago, Rock Island & Gulf.....March 3 mos.	7,611	12,185,693	1,238,493	15,004,911	1,404,088	3,393,701	513,821	6,281,396	6,281,396	84.0	12,607,396	2,397,515	1,152,966	363,696	363,451
Chicago, Rock Island & Gulf.....March 3 mos.	7,611	25,145	17,082	284,001	39,318	45,253	14,712	112,997	112,997	82.2	233,466	50,535	29,361	26,281	30,951
Chicago, Rock Island & Gulf.....March 3 mos.	7,611	769,656	53,870	842,410	103,908	130,158	44,827	326,594	326,594	79.0	665,677	176,733	112,871	54,533	93,516
Chic., St. Paul, Minn. & Omaha.....March 3 mos.	1,663	1,024,232	96,119	1,212,124	99,528	189,197	30,882	564,845	564,845	79.2	960,539	251,585	175,721	97,510	113,621
Clinchfield R. R.....March 3 mos.	1,663	2,967,925	272,892	3,491,834	341,364	566,214	91,494	1,651,376	1,651,376	80.8	2,820,214	671,620	440,187	234,009	302,458
Clinchfield R. R.....March 3 mos.	309	549,898	3,193	558,457	34,878	106,645	16,708	85,190	85,190	45.3	255,923	302,534	262,490	296,915	117,370
Colorado & Southern.....March 3 mos.	309	1,518,202	8,339	1,542,894	127,161	299,602	47,376	248,320	248,320	49.8	760,828	782,066	662,013	748,824	376,735
Colorado & Southern.....March 3 mos.	1,029	333,899	18,012	397,177	57,554	75,930	11,238	161,755	161,755	85.2	338,272	58,905	2,826	16,108	50,762
Ft. Worth & Denver City.....March 3 mos.	804	332,458	28,706	418,494	28,706	70,428	33,574	487,154	487,154	85.8	1,007,173	167,109	105,428	75,086	92,645
Columbus & Greenville.....March 3 mos.	804	1,006,354	87,164	1,253,765	84,889	211,237	46,879	397,833	397,833	67.0	840,192	413,573	322,789	234,664	189,204
Delaware & Hudson.....March 3 mos.	167	66,609	5,024	77,579	16,708	10,344	3,658	31,369	31,369	91.4	70,895	6,684	2,296	3,130	6,320
Delaware & Hudson.....March 3 mos.	167	185,663	14,540	215,593	38,653	31,351	10,172	92,755	92,755	92.8	199,989	15,604	6,809	6,198	20,043
Delaware & Hudson.....March 3 mos.	848	2,087,315	91,759	2,275,593	273,993	534,547	47,348	868,137	868,137	82.0	1,866,500	409,093	338,985	358,991	139,913
Delaware & Hudson.....March 3 mos.	848	5,893,162	285,694	6,451,372	837,545	1,590,875	140,808	2,499,789	2,499,789	85.0	5,484,531	966,841	756,509	811,520	481,764
Delaware, Lackawanna & Western.....March 3 mos.	992	3,159,974	549,235	4,177,996	233,554	714,030	100,885	1,779,497	1,779,497	72.0	3,009,573	1,168,423	817,387	807,397	55,111
Denver & Rio Grande Western.....March 3 mos.	994	8,434,724	1,386,495	11,326,679	762,379	2,255,151	311,120	5,168,557	5,168,557	79.8	9,040,562	2,286,117	1,233,575	1,184,954	61,347
Denver & Rio Grande Western.....March 3 mos.	2,469	1,264,868	58,080	1,406,228	136,870	342,301	42,424	449,445	449,445	74.5	1,047,060	359,168	208,671	225,340	15,870
Denver & Rio Grande Western.....March 3 mos.	2,469	3,660,781	157,074	4,042,559	384,523	965,088	129,723	1,303,190	1,303,190	74.4	3,008,088	1,034,471	583,955	611,632	126,276
Denver & Salt Lake.....March 3 mos.	232	82,253	4,201	96,642	9,373	22,422	4,482	22,298	22,298	68.0	65,737	30,905	16,904	19,323	2,320
Detroit & Mackinac.....March 3 mos.	232	269,277	10,384	311,276	33,681	59,748	4,518	68,964	68,964	63.5	197,787	113,489	71,451	79,978	91,535
Detroit & Mackinac.....March 3 mos.	242	403,559	8,069	494,557	7,435	19,958	2,734	20,840	20,840	79.9	39,512	9,945	5,253	3,157	3,722
Detroit & Mackinac.....March 3 mos.	242	103,559	8,069	125,559	21,720	19,958	2,734	62,601	62,601	93.5	117,369	8,190	5,823	10,838	30,051
Detroit & Toledo Shore Line.....March 3 mos.	50	382,311	.....	384,279	15,459	27,568	6,556	84,238	84,238	36.5	140,173	244,106	210,137	146,473	23,397
Detroit, Toledo & Ironton.....March 3 mos.	50	1,017,348	.....	1,022,584	46,474	70,202	20,003	230,602	230,602	37.8	389,462	636,207	359,871	359,871	176,354
Detroit, Toledo & Ironton.....March 3 mos.	472	695,670	267	1,123,435	50,551	79,541	9,416	133,214	133,214	40.2	286,291	426,144	347,404	311,585	75,955
Duluth, Missabe & Northern.....March 3 mos.	472	1,804,296	818	1,854,962	141,634	211,166	30,432	371,729	371,729	42.8	794,603	1,066,359	866,957	779,795	211,324
Duluth, Missabe & Northern.....March 3 mos.	563	66,245	1,773	85,151	94,509	282,541	3,769	124,454	124,454	639.4	544,466	459,315	470,484	469,086	300,543
Duluth, Missabe & Northern.....March 3 mos.	563	206,263	5,480	261,455	276,389	730,671	9,446	368,692	368,692	52.1	1,500,963	1,239,508	1,273,800	1,273,800	933,839
Duluth, Winnipeg & Pacific.....March 3 mos.	178	80,651	2,610	84,340	14,789	18,361	1,880	37,363	37,363	94.9	81,728	8,172	1,648	1,648	1,311
Duluth, Winnipeg & Pacific.....March 3 mos.	178	208,615	5,742	220,192	220,192	54,846	5,358	107,587	107,587	103.5	227,857	7,665	18,844	10,469	24,467
Elgin, Joliet & Eastern.....March 3 mos.	446	985,698	.....	1,073,496	86,682	220,491	11,935	369,968	369,968	68.1	731,316	342,180	260,787	206,039	81,677
Erie Railroad.....March 3 mos.	446	2,334,352	.....	2,534,875	249,490	622,638	36,938	991,973	991,973	80.1	2,030,614	504,261	262,224	134,286	280,300
Erie Railroad.....March 3 mos.	2,045	5,449,331	1,180,865	6,296,237	406,228	1,146,561	130,320	2,260,860	2,260,860	66.7	2,440,229	2,095,715	1,793,202	1,754,414	516,974
Erie Railroad.....March 3 mos.	2,045	14,173,737	1,188,725	16,555,587	1,204,872	3,358,767	394,149	6,202,902	6,202,902	72.0	11,926,619	4,628,968	3,720,459	3,609,031	1,425,043
Chicago & Erie.....March 3 mos.	269	762,748	10,654	827,450	60,978	90,297	23,117	215,791	215,791	51.2	423,318	404,132	371,686	138,518	25,595
New Jersey & New York.....March 3 mos.	269	2,126,500	29,425	2,305,481	181,569	262,871	67,469	604,749	604,749	52.8	1,216,272	1,089,209	991,819	270,660	15,908
New Jersey & New York.....March 3 mos.	45	20,557	56,329	79,053	5,752	26,139	1,196	55,940	55,940	116.5	92,106	13,053	17,203	34,350	28,829
New Jersey & New York.....March 3 mos.	45	57,994	166,776	230,595	18,461	75,410	3,727	161,794	161,794	117.4	270,727	40,132	52,593	102,697	76,481
N. Y., Susquehanna & Western.....March 3 mos.	131	315,130	26,059	358,989	19,206	57,526	4,001	131,331	131,331	62.0	222,746	136,243	113,193	92,650	31,148
Florida East Coast.....March 3 mos.	131	835,577	78,167	964,618	61,341	166,651	12,483	377,230	377,230	67.5	650,819	33,799	244,652	194,025	72,543
Florida East Coast.....March 3 mos.	839	680,155	1,172,269	1,172,269	111,171	148,229	28,726	283,784	283,784	52.7	617,268	555,001	479,714	426,393	362,393
Florida East Coast.....March 3 mos.	839	1,774,248	880,711	3,032,238	341,635	428,715	64,936	752,726	752,726	57.3	1,738,646	1,293,592	1,067,777	915,193	818,796
Fort Smith & Western.....March 3 mos.	249	45,148	1,068	50,115	14,152	10,446	5,079	18,564	18,564	101.8	51,033	918	2,118	6,079	4,484
Georgia R. R.....March 3 mos.	249	153,851	3,048	169,502	41,427	32,592	15,059	57,102	57,102	91.2	154,551	14,951	9,340	7,292	7,292
Georgia R. R.....March 3 mos.	329	257,567	12,587	296,467	28,601	66,831	16,550	118,211	118,211	82.3	244,125	52,342	47,018	50,312	27,281
Georgia R. R.....March 3 mos.	329	712,162	34,461	817,688	75,313	179,673	48,630	331,948	331,948	82.7	676,516	141,172	125,273	139,758	68,016
Georgia & Florida.....March 3 mos.	465	107,133	1,803	114,107	26,997	16,635	8,011	37,661	37,661	83.3	95,019	19,088	14,054	11,294	6,430
Grand Trunk Western.....March 3 mos.	1,008	1,724,352	50,228	1,894,299	280,440	336,411	32,764	1,041,146	1,041,146	91.9	1,653,441	23,227	7,772	1,900	61,289
Canadian Nat'l Lines in New Eng.....March 3 mos.	1,008	4,166,781	158,697	4,645,804	202,440	952,116	93,042	1,238,346	1,238,346	72.7	3,700,725	516,290	435,247	322,247	167,985
Great Northern.....March 3 mos.	8,360	10,789,262	747,292	12,759,756	1,187,244	2,647,509	464,579	5,104,862	5,104,862	79.4	10,130,063	2,629,693	990,495	578,471	1,325,366
Green Bay & Western.....March 3 mos.	234	88,440	785	93,488	15,920	16,367	2,713	55,435	55,435	84.5	99,318	18,159	5,485	28,015	71,642
Gulf & Ship Island.....March 3 mos.	234	255,518	2,419	269,840	47,164	51,998	7,726	172,668	172,668	117.5	324,643	48,628	78,376	190,113	168,458
Gulf & Ship Island.....March 3 mos.	259	106,400	7,535	131,815	15,687	20,084	2,435	53,244	53,244	73.6	96,982	34,833	19,353	36,311	640
Gulf & Ship Island.....March 3 mos.	264	253,857	19,710	319,363	46,544	55,307	6,769	144,667	144,667	81.1	259,121	60,242	13,970	16,683	50,111

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Correct Shape  
Full Area = 1.14 sq. in.



$\frac{1}{16}$ " Welding  
Effective Area = 0.9144 sq. in. =  
80.2 Per Cent of Correct Area

$1\frac{1}{2}$ -in. o. d. Units. #9 B. w. g. thick

## Proper Reconditioning of Superheater Units Is Vital to Efficiency

Superheater units as they come to the railroad as a part of a new locomotive or ready for application to an existing engine, represent the best skill known to the steel maker's art in the production of tubing and the manufacturer's art in their fabrication.

They are designed to exacting specifications for the highest superheating efficiency and to withstand the severity of the operating conditions to which they are exposed, such as high-temperature gases and steam, high-pressure steam, and the cutting action of cinder-laden gases.

In time naturally they wear out and be-

come unserviceable, as do fireboxes and other boiler parts exposed to similarly severe conditions. The part they play in the efficient operation of the locomotive, the dependence on them for the safety and reliability of locomotive operation—make it imperative that they be either replaced or reconditioned by means proved to be satisfactory.

Through the Elesco unit remanufacturing service, they can be restored to a condition practically equal to new units—at a cost of about half that for new units. As your locomotives are shopped it will pay you well to have the superheater units remanufactured.

# THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street  
NEW YORK



A-869

Peoples Gas Building  
CHICAGO

Canada: The Superheater Company, Limited, Montreal

Superheaters - Feed Water Heaters - Exhaust Steam Injectors - Superheated Steam Pyrometers - American Throttles

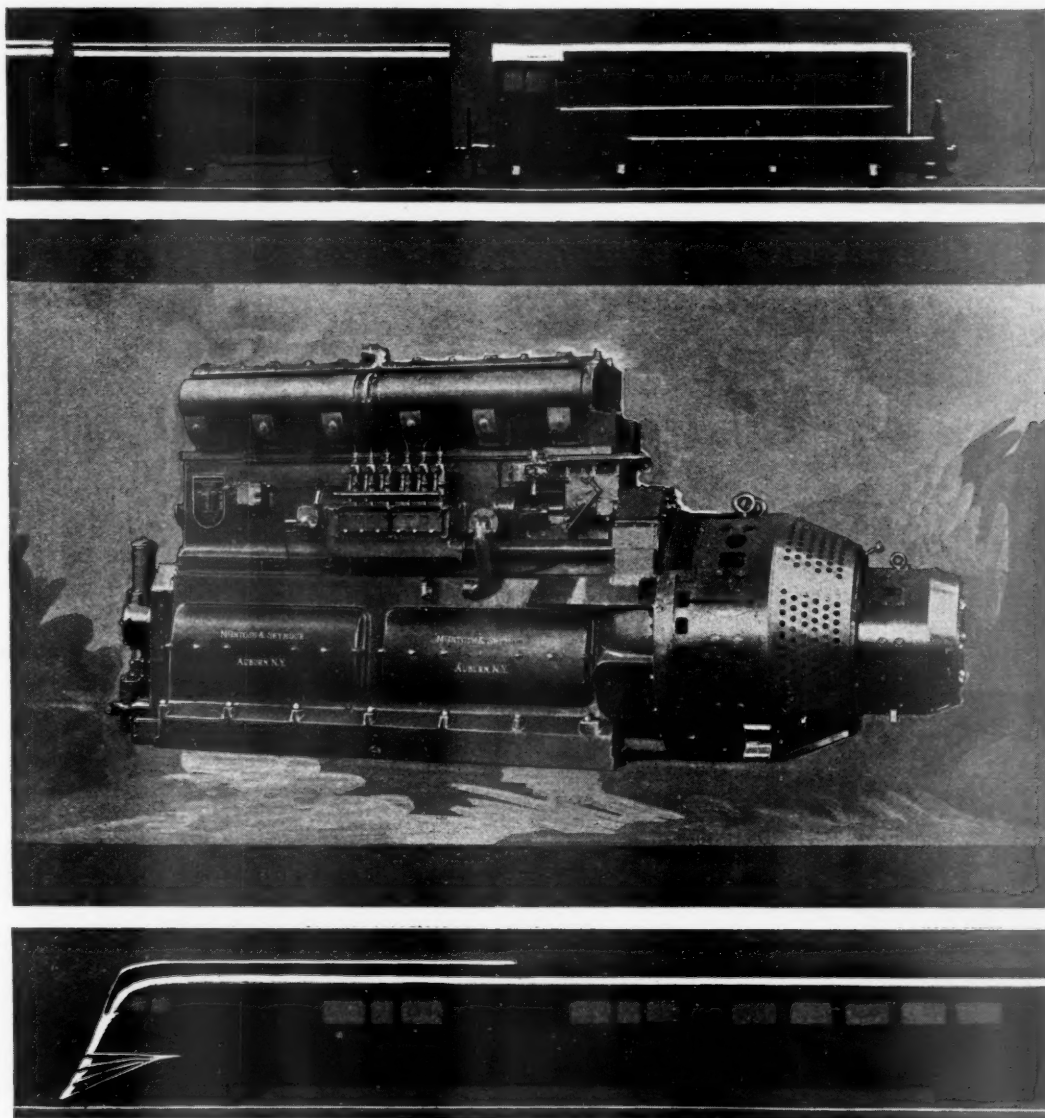
## Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Maintenance of—			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income	Net ry. income, 1933
		Freight	Passenger	Total (inc. misc.)	Way and structures	Equip-ment	Traffic	Trans-portion	General	Total				
Gulf, Mobile & Northern.....	March 961	\$426,080	\$16,476	\$464,384	\$54,618	\$60,240	\$34,528	\$136,006	\$22,966	\$308,358	66.40	\$156,026	\$72,728	\$59,175
Illinois Central.....	3 mos. 961	1,152,448	49,542	1,261,619	158,210	173,161	103,556	396,454	67,886	899,267	71.28	462,352	269,306	38,336
Illinois Central.....	March 5,011	5,783,565	628,831	6,961,565	489,081	1,311,615	172,442	2,572,345	319,067	4,901,243	70.4	2,660,322	1,607,766	696,090
Illinois Central.....	3 mos. 5,011	15,714,908	1,862,955	19,067,791	1,256,106	3,835,993	487,624	7,240,113	952,370	13,873,131	72.8	5,194,660	3,856,169	1,881,492
Yazoo & Mississippi Valley.....	March 1,636	799,887	52,169	927,324	69,971	147,037	25,381	400,060	49,731	693,025	74.7	234,299	124,322	40,032
Yazoo & Mississippi Valley.....	3 mos. 1,636	2,884,436	157,253	2,756,262	180,147	431,815	75,563	1,202,016	145,570	2,028,838	73.6	727,454	392,882	26,140
Illinois Central System.....	March 6,647	6,583,452	681,000	7,888,889	559,052	1,458,652	197,823	2,972,405	369,338	5,594,268	70.9	2,294,621	1,724,088	735,022
Illinois Central System.....	3 mos. 6,647	18,103,344	2,016,208	21,845,083	1,436,253	4,267,808	555,187	8,444,129	1,097,940	13,901,969	72.9	5,922,114	4,243,050	1,833,380
Illinois Terminal.....	March 622	342,331	63,021	442,612	58,637	63,066	14,919	155,472	15,982	309,298	69.88	133,314	105,825	90,042
Illinois Terminal.....	3 mos. 622	984,984	169,088	1,218,617	176,527	180,524	44,103	443,666	47,687	853,224	70.02	368,393	291,180	212,037
Kansas City Southern.....	March 882	725,454	13,875	832,629	134,742	184,742	46,946	277,525	62,974	540,453	71.4	238,276	174,256	133,605
Kansas City Southern.....	3 mos. 882	1,969,178	42,843	2,305,103	216,284	385,213	139,136	776,822	199,256	1,716,819	74.5	588,284	376,769	299,253
Texarkana & Ft. Smith.....	March 326	162,194	399	165,502	15,132	14,415	Included in Kansas City Southern	Included in Kansas City Southern	8,024	82,339	49.7	83,253	68,687	52,931
Texarkana & Ft. Smith.....	3 mos. 326	461,647	1,207	461,355	34,805	21,426	74,252	110,061	23,991	220,746	47.8	240,609	199,518	93,925
Kansas, Oklahoma & Gulf.....	March 326	32,794	142	34,606	16,045	21,283	486	18,936	5,513	62,263	179.9	-27,657	-40,929	-39,609
Kansas, Oklahoma & Gulf.....	3 mos. 326	87,948	476	93,705	51,540	63,014	1,511	56,111	17,714	189,590	202.3	-95,885	-134,507	-117,938
Lake Superior & Ishpeming.....	March 96	140,118	152	147,511	14,783	22,916	3,474	48,010	6,788	95,971	65.1	51,540	39,243	27,676
Lake Superior & Ishpeming.....	3 mos. 96	375,043	661	392,266	42,356	65,840	9,742	133,038	19,238	270,214	68.9	122,052	87,850	27,551
Lehigh & New England.....	March 227	329,991	514	333,020	27,945	75,626	5,346	105,372	14,017	228,306	68.6	104,714	89,620	88,720
Lehigh & New England.....	3 mos. 227	988,771	1,158	996,671	78,968	212,893	15,609	308,057	44,070	659,597	66.2	337,074	287,384	287,877
Lehigh Valley.....	March 1,353	3,889,403	214,157	3,857,532	150,846	578,988	105,637	1,638,522	142,934	2,630,572	68.2	1,222,261	1,031,365	894,173
Lehigh Valley.....	3 mos. 1,353	9,485,058	588,170	10,781,820	569,439	1,635,771	319,169	4,676,123	388,791	7,631,070	70.8	3,150,750	2,563,665	2,159,300
Louisiana & Arkansas.....	March 608	309,067	7,208	344,016	41,809	56,178	22,387	91,945	17,271	229,920	66.8	114,096	84,167	78,877
Louisiana & Arkansas.....	3 mos. 608	943,444	22,687	1,038,982	131,201	164,195	65,966	265,740	54,889	685,948	65.7	356,034	266,448	236,816
Louisiana, Arkansas & Texas.....	March 255	88,738	236	93,458	16,914	14,016	4,433	27,257	4,835	67,455	72.2	26,003	23,473	5,354
Louisiana, Arkansas & Texas.....	3 mos. 255	227,150	774	241,565	42,454	31,527	12,515	81,776	12,960	181,232	75.0	60,333	53,340	7,658
Louisville & Nashville.....	March 5,069	5,583,092	423,779	6,504,572	684,305	1,267,503	174,298	2,164,911	282,267	4,608,011	70.8	1,896,561	1,552,470	1,625,941
Louisville & Nashville.....	3 mos. 5,069	15,691,690	1,227,013	18,307,665	1,945,872	3,467,919	527,627	6,132,733	820,199	12,997,880	71.0	5,309,864	4,279,998	4,405,305
Maine Central.....	March 1,046	867,262	73,897	1,024,954	135,186	195,670	8,890	390,483	37,306	767,535	74.9	257,419	209,431	137,118
Maine Central.....	3 mos. 1,046	2,336,433	238,016	2,805,167	397,311	588,548	27,732	1,156,725	113,605					

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# RAILROAD DIESELS FOR RAILROAD MEN

Reliability in service with low cost and ease of maintenance are the factors of prime importance to a buyer of Diesel locomotives.

These factors predominated all others at all times in the minds of the designers of the Alco unit.

AMERICAN LOCOMOTIVE COMPANY  
**ALCO DIESEL**  
30 CHURCH STREET NEW YORK N.Y.

2,837  
2,315  
27,986  
—160,337

92,536  
242,961  
126,327  
34,971

83.8  
84.0  
632,288  
1,811,820

36,879  
106,079  
279,719  
787,437

39,821  
119,500  
193,284  
510,354

102,469  
288,414  
778,615  
2,155,791

20,431  
61,170  
716,097  
1,981,035

1,201  
1,201  
March  
3 mos.

Mobile & Ohio

page







An  
Average  
Annual  
Return of  
42.86 %

"The average annual return on sixteen Car Retarder installations amounts to approximately \$216,900, representing an average return on the capital investment of 42.86 per cent." \*

"The average cost per car handled through the yard before retarders were installed was \$.80 and after they were installed \$.52, representing an average saving per car handled of \$.28," or 35 per cent. \*

"Four railroads reported that retarders had resulted in eliminating switching at other points with additional savings, ranging from a maximum of \$192,000 to a minimum of \$15,000 a year." \*

**"Union" Electro-Pneumatic Car Retarders will pay their way under abnormally low traffic conditions and earn a most lucrative return in normal times.**

**Our nearest district office will cooperate in estimating the savings and advantages to be effected by a proposed installation.**

*\*Comm. I Report, A. R. A. Signal Section Proc., March, 1934*

1881

Union Switch &amp; Signal Co.

1934

SWISSVALE, PA.

NEW YORK

MONTREAL

CHICAGO

ST. LOUIS

SAN FRANCISCO

# Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1934—CONTINUED

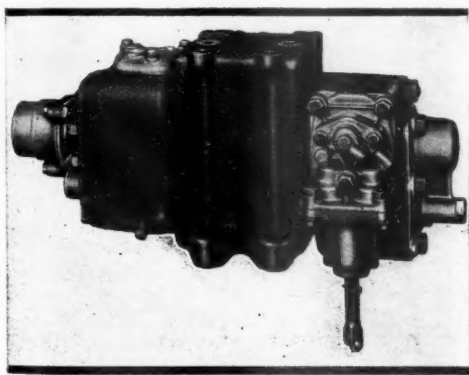
Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation		Net ry. operating income, 1933
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic	Trans- portation	General		Total	Operating income	
Seaboard Air Line.....	March 4,310	\$2,877,581	\$336,018	\$3,611,631	\$588,305	\$651,008	\$133,391	\$1,147,773	\$134,774	74.8	\$2,701,975	\$667,939	\$454,762
.....	3 mos. 4,310	7,862,884	1,046,864	9,993,013	1,513,790	1,820,793	398,238	3,253,576	387,591	75.2	7,516,074	1,752,743	1,210,216
Southern Ry. ....	March 6,644	6,129,225	643,231	7,409,822	864,767	1,259,364	133,862	2,542,923	240,780	68.6	2,328,080	1,886,630	1,674,115
.....	3 mos. 6,644	16,925,070	1,833,924	20,496,928	2,607,047	3,520,961	417,214	7,167,538	707,970	70.9	14,535,640	4,591,516	3,981,214
Alabama Great Southern.....	March 315	338,824	37,986	413,174	72,803	92,674	9,601	137,050	14,530	79.5	328,619	56,599	56,599
.....	3 mos. 315	975,009	104,752	1,179,632	216,109	297,985	32,240	396,886	42,415	79.0	931,635	162,065	162,065
Cinn., New Orleans & Texas Pac. ....	March 336	991,611	67,481	1,129,521	129,713	180,807	20,341	290,143	33,966	58.5	360,274	387,086	349,579
.....	3 mos. 336	2,738,699	205,696	3,112,611	368,306	537,822	68,909	810,799	104,457	61.0	1,904,380	1,005,411	886,940
Georgia Southern & Florida.....	March 397	133,395	32,101	190,294	27,383	39,397	921	78,236	2,251	79.3	150,886	26,545	33,398
.....	3 mos. 397	349,862	88,968	501,079	81,475	116,619	4,044	208,842	6,489	85.2	426,780	35,316	35,316
New Orleans & Northeastern.....	March 204	164,435	16,700	197,136	27,195	38,041	4,978	66,537	8,892	79.6	147,111	50,025	50,025
.....	3 mos. 204	453,928	49,720	545,133	79,361	107,593	17,170	199,261	26,052	79.5	433,540	27,156	27,156
Northern Alabama .....	March 99	42,190	1,731	45,777	12,824	1,410	1,049	14,934	1,606	68.5	31,367	11,245	—
.....	3 mos. 99	138,148	4,661	147,754	32,746	4,420	3,351	44,264	4,860	60.1	88,789	49,506	18,375
Southern Pacific .....	March 8,897	6,554,131	1,224,160	8,698,334	954,414	1,536,144	260,047	3,013,348	528,484	74.2	2,241,370	1,404,829	1,069,429
.....	3 mos. 8,912	17,942,433	3,494,202	23,813,447	2,853,232	4,647,026	749,337	8,711,185	1,555,303	79.8	4,817,145	2,316,975	1,384,933
So. Pac. Steamship Lines.....	March ....	377,461	10,880	401,854	20,309	102,942	16,689	255,627	18,950	103.2	414,517	—13,463	—13,595
.....	3 mos. ....	958,620	26,307	1,022,651	47,315	336,422	48,303	731,407	57,956	119.4	1,221,403	—201,165	—201,165
Texas & New Orleans.....	March 4,478	2,134,896	196,020	2,744,225	338,370	1,162,162	112,034	2,088,507	200,591	81.6	2,182,787	266,138	283,373
.....	3 mos. 4,478	5,950,013	555,213	7,432,954	1,116,244	1,674,963	332,800	2,888,507	604,493	83.5	6,351,807	406,248	—205,924
Spokane, Portland & Seattle.....	March 552	428,226	24,133	482,722	36,684	59,362	5,200	134,200	13,785	52.0	250,851	174,192	152,765
.....	3 mos. 552	983,502	68,745	1,152,150	98,174	132,217	15,942	329,551	42,243	59.9	680,551	288,460	231,293
Tennessee Central .....	March 287	175,950	4,769	191,509	27,225	30,321	5,054	63,227	10,396	71.0	136,023	50,707	35,882
.....	3 mos. 287	517,792	13,273	560,711	76,825	79,604	15,430	186,258	31,533	69.4	388,867	156,248	108,253
Texas & Pacific.....	March 1,950	1,490,450	156,626	1,862,602	185,110	316,870	65,352	542,576	110,922	66.3	1,235,347	526,670	420,206
.....	3 mos. 1,950	4,162,282	428,921	5,199,760	529,207	896,073	193,523	1,562,557	325,486	68.4	3,570,934	1,300,107	1,011,251
Texas Mexican .....	March 162	187,155	1,918	195,568	24,377	35,643	2,957	10,070	6,008	55.7	40,942	28,311	25,100
.....	3 mos. 162	485,279	1,946	204,578	24,377	35,643	5,151	64,706	19,348	74.9	135,141	36,318	27,562
Toledo, Peoria & Western.....	March 239	143,881	22	145,876	41,031	12,583	14,930	40,375	7,880	80.1	116,799	25,747	13,677
.....	3 mos. 239	395,125	44	401,025	113,183	30,988	43,794	115,503	22,698	81.3	325,968	67,164	28,180
Union Pacific .....	March 3,767	4,480,000	365,412	5,278,008	402,054	1,418,175	106,454	1,569,937	263,951	72.4	3,820,174	1,006,834	806,564
.....	3 mos. 3,767	12,335,932	961,909	14,594,644	956,546	3,782,042	317,411	4,560,095	791,491	72.5	10,577,299	2,660,695	2,089,565
Oregon Short Line.....	March 2,504	1,437,603	81,073	1,631,102	179,440	244,399	28,072	501,790	86,444	64.8	1,057,502	346,876	273,345
.....	3 mos. 2,504	4,098,492	228,537	4,787,358	421,809	781,564	85,402	1,520,886	259,064	67.8	3,225,474	851,448	620,076
Oregon-Wash. R. R. & Nav. Co. ....	March 2,295	1,087,969	78,570	1,293,434	181,230	165,655	43,294	441,608	82,525	71.1	919,247	239,929	167,726
.....	3 mos. 2,295	3,049,056	219,578	3,640,870	624,360	499,710	136,836	1,301,015	249,215	77.6	2,825,763	412,317	139,355
Los Angeles & Salt Lake.....	March 1,241	1,138,500	111,144	1,351,399	143,375	177,882	38,188	377,619	54,931	62.0	1,184,606	392,928	266,737
.....	3 mos. 1,241	3,136,353	264,512	3,684,437	446,015	577,792	121,203	1,119,514	161,946	67.8	2,499,831	822,701	463,851
St. Joseph & Grand Island.....	March 258	238,118	1,618	246,149	36,720	23,265	2,112	141,165	11,240	57.3	104,984	88,424	57,532
.....	3 mos. 258	688,941	4,325	712,752	67,427	69,035	6,513	198,291	34,144	52.9	376,705	283,793	192,547
Utah .....	March 111	42,957	.....	43,015	8,698	16,395	638	10,994	5,000	97.0	41,725	—4,972	—4,972
.....	3 mos. 111	180,273	.....	181,252	25,579	53,095	1,612	43,550	15,604	77.0	139,540	17,221	17,221
Virginian .....	March 619	1,271,217	7,052	1,313,431	103,918	218,389	16,658	222,611	25,348	44.6	586,268	727,163	625,463
.....	3 mos. 619	3,579,444	17,621	3,736,726	296,793	636,299	49,103	648,952	74,646	45.6	2,031,742	1,359,176	1,782,492
Wabash .....	March 2,457	3,137,132	160,772	3,515,272	329,040	564,163	131,782	1,297,472	126,553	69.8	2,454,833	925,616	603,010
.....	3 mos. 2,457	8,411,256	442,578	9,464,704	924,714	1,546,671	393,296	3,653,849	370,320	73.0	6,904,829	2,156,647	1,400,643
Ann Arbor .....	March 293	269,057	2,561	278,271	18,953	44,923	10,911	119,469	10,042	73.4	204,185	57,860	40,269
.....	3 mos. 293	747,137	7,036	773,631	61,855	136,210	31,668	351,207	30,218	79.2	613,083	111,756	63,008
Western Maryland .....	March 891	1,374,298	7,824	1,416,739	203,399	297,982	34,635	327,734	37,978	63.8	903,304	433,435	474,294
.....	3 mos. 891	3,618,420	20,077	3,731,624	438,184	795,191	98,822	925,863	111,610	63.6	3,300,079	1,400,079	1,225,416
Western Pacific .....	March 1,213	820,907	17,671	839,626	115,724	157,027	53,293	321,483	38,049	80.7	723,292	104,158	78,723
.....	3 mos. 1,213	2,213,908	36,954	2,366,819	320,085	453,425	155,848	910,177	107,319	84.9	2,008,488	150,856	110,102
Wheeling & Lake Erie.....	March 511	1,060,662	1,706	1,121,720	82,831	284,955	28,614	313,090	29,839	65.9	739,329	277,776	262,979
.....	3 mos. 511	2,742,311	5,076	2,898,924	213,567	776,150	83,313	851,436	84,376	69.4	2,010,469	609,493	570,174
Wichita Falls & Southern.....	March 203	116,425	128	131,507	28,486	19,442	5,090	39,027	10,208	77.5	102,253	20,585	7,896
.....	3 mos. 203	311,507	128	311,507	28,486	19,442	5,090	39,027	10,208	77.5	102,253	20,585	7,896

Railroad annual report advertising begins on next left-hand page



# The "AB" BRAKE *Cuts* Railway Operating Costs By —

No. 5  
of a Series.

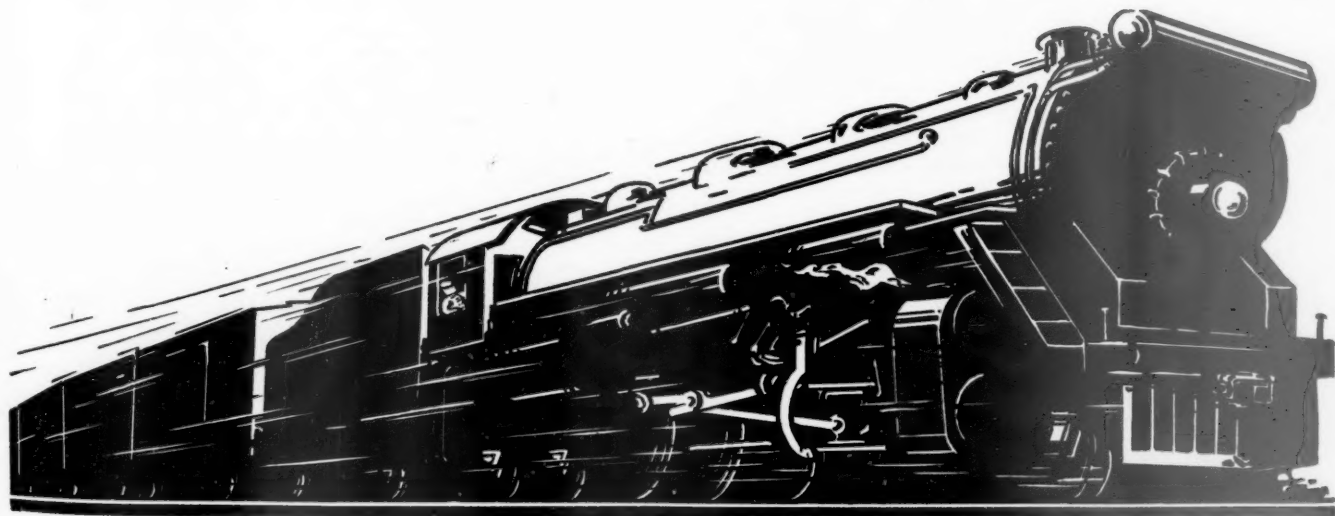


## Equality of Brake Work on Wheels

WITH the "AB" Equipment, since all brakes in the train apply with effective force, each car does its full share of the work of retardation. The wheels are therefore kept at a more nearly uniform temperature and there will be fewer flat spots, burns, and thermal cracks, thus reducing the cost of wheel maintenance and increasing the number of cars available for service at all times.

WESTINGHOUSE AIR BRAKE CO.  
General Office and Works Wilmerding, Pa.

(1263)



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# Annual Reports

## Minneapolis, St. Paul & Sault Ste. Marie Railway Co.

For the Fiscal Year Ended December 31, 1933

To the Stockholders:

Submitted herewith is a report for the fiscal year ended December 31, 1933.

The Gross Revenue, Operating Expenses, Fixed Charges, Net Income, etc., are shown in the following condensed statement:

	Year 1933	Year 1932
Gross Revenue .....	\$12,866,942.87	\$12,596,141.46
Operating Expenses .....	10,630,286.47	11,514,699.15
Net Revenue .....	\$2,236,656.40	\$1,081,442.31
Income from Other Sources .....	386,719.41	902,900.76
Total Income .....	\$2,623,375.81	\$1,984,343.07
Fixed Charges, Taxes, etc. ....	7,466,871.56	7,523,382.81
Net Deficit .....	\$4,843,495.75	\$5,539,039.74

**Gross Revenue** during 1933 was \$12,866,943.00, an increase of \$270,802.00, or 2.15% compared with the previous year.

**Freight Revenue** during 1933 was \$11,059,272.00, an increase of \$484,671.00, or 4.58%.

The increases and decreases in Freight Revenue were as follows:

Products of Agriculture .....	\$293,285	Increase
Products of Forests .....	108,582	Increase
Less Than Carload Freight .....	20,482	Increase
Animals and Products .....	11,967	Increase
Products of Mines .....	170,823	Increase
Manufactures and Miscellaneous .....	120,468	Decrease
Total Increase .....	\$484,671	

**Products of Agriculture.** There was an increase in shipments of grain, partly offset by a decrease in shipments of grain products and hay.

The expected heavy movement of the 1932 grain crop during the first part of 1933 did not materialize. Due to damage from grasshoppers, drouth in certain districts, and low prices, a considerable part of the carry-over from the 1932 crop was not shipped to market but was used by the farmers for feed.

The 1933 grain crop was planted under favorable conditions. Later, a very protracted and destructive period of dry weather ensued so that only about one-half of a normal crop was harvested. Owing to the small crop, market conditions, and the grain embargo by North Dakota authorities, Soo Line shipments of 1933 grain from August 1, 1933, to December 31, 1933, amounted to only 10,517,000 bushels. It is estimated that the amount of grain on our line in the hands of farmers and in elevators on December 31, 1933, was 15,400,000 bushels.

Shipments of grain to Minneapolis and Duluth markets from western territory tributary to our line, compared with corresponding shipments of the previous year, were as follows:

	1933 Bushels	1932 Bushels
Before August 1 .....	10,707,000	3,895,000
After August 1 .....	10,517,000	13,763,000
Total .....	21,224,000	17,658,000

The following table shows the grain crop harvested in each of the years shown and subsequently shipped to market over our line during the twelve-month period beginning August 1 of each year shown:

Year	Bushels	Year	Bushels
1915 .....	83,527,877	1924 .....	66,280,641
1916 .....	34,233,059	1925 .....	55,374,519
1917 .....	28,560,411	1926 .....	30,627,251
1918 .....	52,002,485	1927 .....	54,138,346
1919 .....	30,393,424	1928 .....	56,816,503
1920 .....	41,232,301	1929 .....	32,867,641
1921 .....	36,832,469	1930 .....	41,556,685
1922 .....	59,429,961	1931 .....	12,118,000
1923 .....	34,657,645	1932 .....	24,470,000

**Products of Forests** increased as a result of greater business activity in the last eight months of 1933.

**Less than Carload Freight.** Decreases in the first part of the year due to general business conditions and low purchasing power of the farming communities, were more than offset by increases in the latter part of the year. This class of traffic is still affected by competition of trucks and forwarding companies.

**Animals and Products.** The downward trend of recent years because of increasing use of trucks to transport livestock has apparently been halted. Strenuous efforts are being continued to

regain this business through rate reductions, work with farmers' shipping associations, and educational community meetings with farmers. We are encouraged to believe that our efforts are now bringing results.

**Products of Mines** increased as a result of greater iron ore shipments, our total tonnage being 457,855 tons compared with 62,491 tons in 1932. Total ore shipments by all railroads from mines in the Lake Superior District in 1933 were 21,623,898 tons compared with 3,588,608 tons in 1932. Lignite coal shipments increased during the year, total tonnage being 470,814 tons compared with 457,408 tons handled in 1932. Bituminous coal shipments decreased due to business and weather conditions and the increased use of lignite and natural gas. The South St. Paul packing plants began the use of natural gas in the fall of 1933, thereby causing a loss to the railroads of approximately 125,000 tons of dock coal per annum, the rail revenue on which would be about \$225,000. Sand, gravel, and stone continued to show large decreases on account of the further slackening of construction activities, especially during the first part of the year. Highway construction was negligible.

**Manufacturers and Miscellaneous.** The decrease was due in part to the low purchasing power of the farmers and the communities serving them. Trucks continued to make large inroads on this class of traffic.

The activities of Pace, Incorporated, industrial engineers, were concentrated on conservation and restoration work among principal industries along our line.

Comparisons of cars loaded on our line and received from connections, and revenue, 1929 to 1933, inclusive, are shown in the statement below:

	(000 omitted from revenue)				
	1929	1930	1931	1932	1933
Products, Agricultural:					
Cars .....	55,886	51,479	35,077	30,302	29,977
Revenue .....	\$6,119	\$5,865	\$3,388	\$2,982	\$3,276
Products, Animal:					
Cars .....	21,563	16,565	15,566	11,740	12,215
Revenue .....	\$1,550	\$1,285	\$1,210	\$801	\$813
Products, Mines:					
Cars .....	87,217	71,328	48,402	38,663	43,886
Revenue .....	\$3,791	\$3,256	\$2,308	\$1,934	\$2,104
Products, Forests:					
Cars .....	83,912	60,835	39,403	24,228	29,347
Revenue .....	\$3,472	\$2,755	\$1,696	\$1,158	\$1,266
Miscellaneous:					
Cars .....	70,169	58,699	41,936	32,028	31,848
Revenue .....	\$6,277	\$4,923	\$3,117	\$2,570	\$2,450
Merchandise:					
Tons .....	245,842	202,350	154,980	105,326	110,870
Revenue .....	\$2,625	\$2,091	\$1,560	\$1,130	\$1,150
Grand Total:					
Cars .....	318,747	258,906	180,384	136,961	147,273
Revenue .....	\$23,834	\$20,175	\$13,279	\$10,575	\$11,059

**Passenger Revenue** was \$621,963.00, a decrease of \$124,749.00, or 16.7 per cent. On December 1, 1933, general reductions were made by the Western Lines in the basic passenger fares from 3.6 cents per mile to 3 cents per mile for one-way first-class travel, 2 cents per mile for one-way coach travel, and 2 cents per mile for round-trip on all classes of transportation, and, in addition, the surcharge for travel in sleeping cars was eliminated. Since the establishment of these fares, there has been a substantial increase in local travel, and while they are in effect for an experimental period until May 31, 1934, it is expected the reduced rates will be made permanent on approximately the present basis with possible slight modifications. Through passenger traffic continued light on account of general conditions.

**Revenue from Milk and Cream** handled in baggage cars was \$108,852.00, a decrease of \$52,556.00, or 32 per cent, due particularly to a large reduction in rates on butter fat and sour cream, effective in April, 1933, which was necessary to meet motor truck competition. The rate reduction improved the volume of business handled and prevented a greater decrease in revenue.

**Department of Agricultural Development.** The serious grasshopper menace, and the drouth which prevailed in certain parts of our territory in North Dakota, necessitated the devotion of most of the time of this department in the first part of the year to emergency work in that state. These activities included the location of suitable supplies of seed and feed for use in the stricken areas, co-operation with the governmental agencies in connection with seed and feed loans to farmers, co-operation with county commissioners and county agents in the distribution of grasshopper bait, and the education of those concerned in its proper application.

[Advertisement]



## GENERAL BALANCE SHEET, DECEMBER 31, 1933

ASSETS	
Property Investment:	
Road .....	\$104,011,001.54
Equipment .....	31,818,937.69
	\$135,829,939.23
Less Reserve for Equipment Depreciation .....	14,834,927.36
Total .....	\$120,995,011.87
Sinking Fund .....	2,216.68
Deposits in lieu of Mortgaged Prop. Sold..	4,884.94
Miscellaneous Physical Property .....	3,125,155.39
Wis. Cent. Ry. Co., Preferred Stock.....	11,256,400.00
(Pledged for M. St. P. & S. S. M. Ry. Co., 4% Leased Line Certificates)	
Investments in Proprietary, Affiliated, and Controlled Companies:	
Stocks .....	\$12,008,382.47
Bonds .....	8,000,000.00
W. C. Ry. Co. Advances.....	696,660.00
Other Advances .....	2,607,778.27
Total .....	23,312,820.74
Other Investments:	
Stocks .....	\$1.00
Bonds .....	1,838,200.00
Notes .....	182,014.56
Real Estate Sales Contracts.....	32,187.34
Total .....	2,052,402.90
Current Assets:	
Cash .....	\$662,578.29
Special Deposits—Special Wisconsin Central Fiduciary Account.....	371,585.65
Other Special Deposits .....	43,280.29
Loans and Bills Receivable .....	1,210.19
Traffic and Car Service Balances.....	151,123.49
Agents and Conductors Balances.....	365,763.95
Miscellaneous Accounts Receivable.....	428,859.78
Material and Supplies .....	1,951,169.53
Interest and Dividends Receivable.....	3,728.03
Other Current Assets .....	13,423.10
Total .....	3,992,722.30
Deferred Assets:	
Working Fund Advances.....	\$27,907.65
Other Deferred Assets .....	316,590.80
W. C. Ry. Co. Advances.....	6,979,817.57
Total .....	7,324,316.02
Unadjusted Debits:	
Rents and Insurance Paid in Advance ..	\$31,962.76
Discount on Funded Debt .....	752,718.25
Discount on Canadian Funds .....	728,567.61
(To be amortized as loans are repaid)	
Other Unadjusted Debits.....	733,450.52
Total .....	2,246,699.14
Grand Total .....	\$174,312,629.98

Experimental work on corn, potatoes, and livestock, as well as activities with boys' and girls' clubs, were continued on a curtailed basis.

This department continued its educational efforts with the farmers' livestock shipping associations, meetings being held in all communities with a view to having shipments made by rail instead of by truck. Several new associations were organized and some of the less active organizations were revived.

**Bus and Truck Competition.** During the past year the Minnesota Legislature enacted new laws for the regulation of trucks and buses, but the need for further legislation by the states, as well as the Federal Government, still exists. Contract and private truckers are still able to cut rates promiscuously and consequently any drastic efforts to meet this competition would be too costly to attempt. Close watch is being kept of various experiments in all parts of the country to regain traffic from trucks with a view to adopting any methods which appear advisable. It is contemplated that arrangements will soon be completed for store-door delivery of carloads of automobiles at certain selected points, which, together with the use of automobile cars equipped with the new loading devices, and reduced rates in western territory (which will probably be followed shortly by reductions from eastern territory) is expected to return to the rails a substantial share of this business.

**Maintenance of Way and Structures** expenses decreased \$137,606.00, or 6.69 per cent. The major portion of the decrease resulted from the treated tie program inaugurated in 1920. The cost of ties decreased \$95,000.00, and the cost of placing ties in track decreased \$32,000.00. Savings were made in other items of expense which were offset by a charge of \$49,500.00 representing an inventory adjustment of repair rail to market value.

**Maintenance of Equipment** expenses decreased \$410,981.00, or 13.88 per cent. Of this amount, \$259,000.00 represents actual labor and material saved by curtailment of various programs. There was a reduction in depreciation charges on account of less

LIABILITIES	
Capital Stock:	
Common .....	\$25,206,800.00
Preferred .....	12,603,400.00
Total .....	\$37,810,200.00
Governmental Grants:	
Grants in Aid of Construction.....	3,224.89
Funded Debt Unmatured .....	93,240,800.00
M. St. P. & S. S. M. Ry. Co. 4% Leased Line Certificates .....	11,256,400.00
(Issued in exchange for Preferred Stock of Wis. Central Ry. Co., held by Trustee.)	
Non-negotiable Debt to Affiliated Companies .....	7,894,839.62
(Including \$6,348,381.92 stated at par, payable in Canadian Funds.)	
Current Liabilities:	
Loans and Bills Payable .....	\$14,562,377.19
Traffic and Car Service Balances.....	312,095.36
Audited Vouchers and Wages Payable...	1,875,305.78
Miscellaneous Accounts Payable.....	49,694.60
Interest Matured Unpaid .....	1,988,188.75
(Leased Line Certificates) .....	*450,256.00
Unmatured Interest Accrued .....	418,374.17
Unmatured Rents Accrued .....	6,790.44
Receiver of W. C. Ry. Co.....	623,231.91
Other Current Liabilities .....	152,758.83
Total .....	20,439,073.03
Deferred Liabilities:	
Equipment Purchase Contracts .....	\$1,021,519.17
Other Deferred Liabilities .....	39,824.80
Total .....	1,061,343.97
Unadjusted Credits:	
Tax Liability .....	\$858,551.11
Premium on Funded Debt .....	842.72
Other Unadjusted Credits .....	559,950.57
Total .....	1,419,344.40
Corporate Surplus:	
Additions to Property through Income and Surplus .....	\$240,645.12
Funded Debt Retired through Income and Surplus .....	287,000.00
Sinking Fund Reserve .....	2,216.68
Profit and Loss, Credit Balance.....	657,542.27
Total .....	1,187,404.07
Grand Total .....	\$174,312,629.98

\* Unpaid installments liability for which is in dispute.

equipment owned. There were also decreases in the equipment retirement accounts resulting from charging the bookkeeping loss on equipment retired under a special program to profit and loss instead of to operating expenses.

**Transportation Expenses** decreased \$310,556.00, or 5.89 per cent. The total transportation expense for the past three years was as follows:

1931 .....	\$6,444,151.00
1932 .....	5,275,957.00
1933 .....	4,965,401.00

The annual decreases were:

1931 .....	\$1,876,567.00, or 22.55%
1932 .....	1,168,194.00, or 18.13%
1933 .....	310,556.00, or 5.89%

Total gross ton miles, representing the effort required to handle the traffic, increased 7.58 per cent. Gross tons per train averaged 1,047 in 1933 as compared with an average of 936 in the previous year resulting in decreased costs for labor and fuel. Many other transportation economies were effected during the year.

**Hire of Equipment** charges increased \$23,282.00, largely due to a change in accounting practice.

**Property Investment.** The investment in road account shows a net increase for the year of \$26,474.58 as the result of gross expenditures of \$264,218.84, less retirements and accounting adjustments amounting to \$237,744.26. The two major classes of work included in expenditures are grade separation projects and the application of tie plates. Abnormal retirements aggregated \$161,299.34, representing the book value of 12.37 miles of branch line, 20,048 feet of side and yard tracks, and 24 structures no longer required.

The equipment investment account shows a net decrease for the year of \$3,004,992.36, due to retirement of equipment and accounting adjustments totaling \$3,015,278.12, less expenditures for additions and betterments amounting to \$10,285.76. The retirements included 38 locomotives, 1,889 freight cars, 12 sleeping cars, and 128 work cars retired under the special program referred to above.

**Funded and Unfunded Debt.** The outstanding indebtedness

was decreased during the year a net amount of \$1,124,681.09, as follows:

<b>Increases</b>	
* First Refunding Mortgage Bonds, Series "B".....	\$100,000.00
<b>Decreases</b>	
One Year Five Percent Secured Notes.....	\$3,000.00
First Refunding Mortgage Bonds, Series "A"....	22,000.00
Twenty-five Year Gold Notes.....	82,000.00
Equipment Trust Notes.....	629,000.00
Equipment Purchase Contracts.....	333,706.82
Short Term Loans from Reconstruction Finance Corporation.....	97,629.77
Short Term Loans from The Railroad Credit Corporation.....	57,344.50
Total Decrease.....	\$1,224,681.09
Net Decrease.....	\$1,124,681.09

\* Owned by the Soo Line December 31, 1932.

Non-negotiable Debt to Affiliated Companies increased \$4,850,829.00.

The Wisconsin Central properties are still in receivership and the Soo Line is still operating them as agent for the receiver. The legal proceeding mentioned in the last paragraph of our 1932 report resulted in a decision by the Court that the Soo Line was entitled to terminate its lease of the Wisconsin Central properties when they could be operated only at a loss. A further controversy has developed and is still pending as to whether the lease was actually terminated.

The receiver of the Wisconsin Central properties has made a

report to the court covering his operations for the calendar year 1933, copies of which may be obtained upon application to Mr. A. E. Wallace, Receiver.

As the foregoing figures show, the year 1933 was slightly better than 1932. In the early part of the year, business was at a very low ebb and the bank holiday in March added to the uncertainty and seriously affected all lines of business. Beginning in May, business showed quite an improvement, which maintained throughout the year except that the movement of grain was very light. Our crop conditions were very favorable up to the middle of June, but from that time on the drouth and heat were such that the conditions rapidly grew worse and resulted in one of the smallest crops ever harvested in our territory.

At the present time conditions in our territory are somewhat better than a year ago because of the increased prices of farm products and the vast amount of money the Federal Government is loaning and spending in this territory. Were it not for the one great danger facing us of moisture conditions, which are very bad, we could feel reasonably sure that this year would show much better results than 1933. To harvest a normal crop this year, we must have the most favorable moisture conditions for the remainder of the growing season.

Our property has been maintained as well as possible under business conditions and we are in a position to handle the increased business which we hope we will have this year. Also, our organization is working in the most satisfactory manner and to them is to be given the credit for whatever showing we are making.

C. T. JAFFRAY,  
President.

## Missouri-Kansas-Texas Railroad Company and Controlled Companies Annual Report for the Year Ended December 31, 1933

St. Louis, Mo., April 10, 1934.

### TO THE STOCKHOLDERS:

The Board of Directors submit herewith report of the operations and affairs of your property for the year ended December 31, 1933.

#### CONSOLIDATED INCOME ACCOUNT

Year Ended December 31, 1933, Compared with Year Ended December 31, 1932

	1933 Amount	1932 Amount	+ Increase - Decrease
Average Mileage Operated.....	3,293.93	3,293.93	.....
<b>OPERATING REVENUES:</b>			
Freight.....	\$21,314,966.76	\$22,151,230.38	-\$836,263.62
Passenger.....	1,835,170.38	2,281,146.12	-445,975.74
Mail.....	1,052,640.10	1,092,975.50	-40,335.40
Express.....	504,939.55	696,664.40	-191,724.85
Miscellaneous.....	708,194.01	705,781.01	+2,413.00
Incidental.....	197,916.77	217,652.07	-19,735.30
Joint Facility.....	82,847.60	94,377.56	-11,529.96
Total Operating Revenues.....	\$25,696,675.17	\$27,239,827.04	-\$1,543,151.87
<b>OPERATING EXPENSES:</b>			
Maintenance of Way and Structures.....	\$3,093,173.85	\$3,079,235.55	+\$13,938.30
Maintenance of Equipment.....	3,843,890.23	3,672,340.06	+171,550.17
Traffic Expenses.....	1,469,285.41	1,358,799.99	+110,485.42
Transportation Expenses.....	8,745,473.97	9,332,466.13	-586,992.16
Miscellaneous Operations.....	169,079.07	189,172.43	-20,093.36
General Expenses.....	1,684,507.28	1,612,569.51	+71,937.77
Transportation for Investment—Cr. ....	7,205.63	16,678.74	+9,473.11
Total Operating Expenses.....	\$18,998,204.18	\$19,227,904.93	-\$229,700.75
Net Revenue from Railway Operations.....	\$6,698,470.99	\$8,011,922.11	-\$1,313,451.12
RAILWAY TAX ACCRUALS*.....	\$1,646,435.05	\$2,222,009.64	-\$575,574.59
UNCOLLECTABLE RAILWAY REVENUES.....	28,586.04	19,187.11	+9,398.93
Total.....	\$1,675,021.09	\$2,241,196.75	-\$566,175.66
Railway Operating Income.....	\$5,023,449.90	\$5,770,725.36	-\$747,275.46
<b>OTHER OPERATING INCOME:</b>			
Rent from Locomotives.....	\$14,760.53	\$16,841.94	-\$2,081.41
Rent from Passenger Train Cars.....	75,724.91	67,057.37	+8,667.54
Rent from Work Equipment.....	5,667.85	8,765.88	-3,098.03
Joint Facility Rent Income.....	182,939.02	179,223.65	+3,715.37

\* Depreciation on equipment has been accrued at the rate of 2% per annum, the same as for the year 1932.

† After applying a credit of \$300,000 created out of prior years' income.

#### CONSOLIDATED INCOME ACCOUNT—Continued

	1933 Amount	1932 Amount	+ Increase - Decrease
Total Other Operating Income.....	\$279,092.31	\$271,888.84	+\$7,203.47
Total Operating Income.....	\$5,302,542.21	\$6,042,614.20	-\$740,071.99
<b>DEDUCTIONS FROM OPERATING INCOME:</b>			
Hire of Freight Cars—Debit Balance.....	\$1,321,734.75	\$1,217,817.62	+\$103,917.13
Rent for Locomotives.....	36,110.05	38,243.83	-2,133.78
Rent for Passenger Train Cars.....	96,432.47	110,112.99	-13,680.52
Rent for Work Equipment.....	4,764.87	6,776.85	-2,011.98
Joint Facility Rents.....	899,755.92	887,238.24	+12,517.68
Total Deductions from Operating Income.....	\$2,358,798.06	\$2,260,189.53	+\$98,608.53
Net Railway Operating Income.....	\$2,943,744.15	\$3,782,424.67	-\$838,680.52
<b>NON-OPERATING INCOME:</b>			
Income from Lease of Road.....	\$120,435.15	\$113,823.17	+\$6,611.98
Miscellaneous Rent Income.....	273,833.55	247,569.59	+26,263.96
Miscellaneous Non-Operating Physical Property Dividend Income.....	4,369.60	10,709.47	-6,339.87
Income from Funded Securities.....	1,589.00	1,651.50	-62.50
Income from Unfunded Securities and Accounts.....	8,844.85	21,346.80	-12,501.95
Miscellaneous Income.....	34,155.71	101,820.34	-67,664.63
Total Non-Operating Income.....	\$1,081.75	1,389.25	-307.50
Gross Income.....	\$444,309.61	\$498,310.12	-\$54,000.51
Total Gross Income.....	\$3,388,053.76	\$4,280,734.79	-\$892,681.03
<b>DEDUCTIONS FROM GROSS INCOME:</b>			
Miscellaneous Rents.....	\$11,016.28	\$10,131.64	+\$884.64
Miscellaneous Tax Accruals.....	9,540.02	12,666.66	-3,126.64
Interest on Unfunded Debt.....	31,579.14	27,190.39	+4,388.75
Miscellaneous Income Charges.....	274.34	432.12	-157.78
Total Deductions from Gross Income.....	\$52,409.78	\$50,420.81	+\$1,988.97
Balance Available for Interest.....	\$3,335,643.98	\$4,230,313.98	-\$894,670.00
Fixed Interest Charges.....	4,173,763.70	4,183,851.35	-10,087.65

[Advertisement]



## CONSOLIDATED INCOME ACCOUNT—Continued

	1933 Amount	1932 Amount	+ Increase - Decrease
Balance Available for Interest on Adjustment Bonds .....	\$838,119.72	\$46,462.63	-\$884,582.35
Interest on Adjustment Bonds .....	678,878.36	678,878.36	.....
Net Income .....	\$1,516,998.08	\$632,415.73	-\$884,582.35

Italics denote debit.

## Financial

There was no change in the amount of preferred or common stock outstanding in the hands of the public during the year.

Long term debt was decreased \$84,100 by retirement of equipment trust notes which matured during the year.

Underlying bonds amounting to \$2,000 were exchanged during the year for a similar amount of Prior Lien Series "A" Bonds.

Equipment notes amounting to \$237,746.05 were issued during the year. These notes mature serially over a period of 23 months.

## Missouri-Kansas-Texas Lines—Consolidated General Balance Sheet

ASSETS				LIABILITIES			
	December 31, 1933	December 31, 1932	+ Increase - Decrease		December 31, 1933	December 31, 1932	+ Increase - Decrease
INVESTMENTS AT COST:				STOCK:			
Investment in Road and Equipment:				CAPITAL STOCK:			
Road .....	\$214,574,010.56	\$214,358,536.16	+\$215,474.40	Preferred, Series "A"			
Equipment .....	42,057,123.75	43,314,080.85	-1,256,957.10	(Par value \$100 per share) .....	\$66,672,073.08	\$66,671,000.83	+\$1,072.25
	\$256,631,134.31	\$257,672,617.01	-\$1,041,482.70	Common (No par value. See note) ..	66,672,747.67	66,672,747.67	.....
Deposits in Lieu of Mortgage Property	212.50	212.50	.....	STOCK LIABILITY FOR CONVERSION:			
Sold .....				Preferred, Series "A"			
Miscellaneous Physical Property .....	999,871.68	996,423.33	+3,448.35	(Par value \$100 per share) .....	31,662.53	32,734.78	-1,072.25
Investments in Affiliated Companies—Pledged ..	527,000.00	527,000.00	.....	Common (No par value. See note) ..	16,736.81	16,736.81	.....
Investments in Affiliated Companies—Unpledged	1,732,014.22	1,653,436.88	+78,577.34				
Other Investments .....	586,019.09	581,794.73	+4,224.36	TOTAL STOCK ....	\$133,393,220.09	\$133,393,220.09	.....
TOTAL INVESTMENTS.	\$260,476,251.80	\$261,431,484.45	-\$955,232.65	LONG TERM DEBT:			
CURRENT ASSETS:				Mortgage Bonds .....	\$93,094,179.30	\$93,094,179.30	.....
Cash .....	\$5,628,825.74	\$3,325,064.09	+\$2,303,761.65	Equipment Trust Obligations .....	168,200.00	252,300.00	-\$84,100.00
Demand Loans and Deposits .....	150,000.00	.....	+150,000.00	Income Mortgage Bonds	13,577,567.24	13,577,567.24	.....
Time Drafts and Deposits .....	920,594.16	3,755,064.35	-2,834,470.19	TOTAL LONG TERM DEBT .....	\$106,839,946.54	\$106,924,046.54	-\$84,100.00
Special Deposits .....	7,745.02	9,444.66	-1,699.64	CURRENT LIABILITIES:			
Loans and Bills Receivable .....	40,782.40	62,895.02	-22,112.62	Loans and Bills Payable	\$186,062.04	.....	+\$186,062.04
Traffic and Car Service Balances Receivable ..	308,327.02	325,902.39	-17,575.37	Traffic and Car Service Balances Payable ..	546,350.92	\$481,341.79	+65,009.13
Net Balance Receivable from Agents and Conductors .....	512,299.69	386,706.17	+125,593.52	Audited Accounts and Wages Payable ....	2,879,011.90	1,967,593.12	+911,418.78
Miscellaneous Accounts Receivable .....	842,001.63	808,470.00	+33,531.63	Miscellaneous Accounts Payable .....	75,826.40	94,016.20	-18,189.80
Material and Supplies at Cost .....	2,662,802.57	2,998,466.99	-335,664.42	Interest Matured Unpaid .....	1,636,012.92	1,628,828.89	+7,184.03
Interest and Dividends Receivable .....	9,467.91	61,524.98	-52,057.07	Dividends Matured Unpaid .....	16,702.75	17,187.00	-484.25
Other Current Assets ..	18,305.38	18,100.31	+205.07	Funded Debt Matured Unpaid .....	1,546.00	2,642.00	-1,096.00
TOTAL CURRENT ASSETS .....	\$11,101,151.52	\$11,751,638.96	-\$650,487.44	Unmatured Interest Accrued .....	454,350.21	452,622.43	+1,727.78
DEFERRED ASSETS:				Unmatured Rents Accrued .....	87,457.91	120,222.51	-32,764.60
Working Fund Advances	\$64,527.09	\$66,002.78	-\$1,475.69	Other Current Liabilities	129,558.63	83,547.96	+46,010.67
Other Deferred Assets.	349,532.63	332,769.54	+16,763.09	TOTAL CURRENT LIABILITIES .....	\$6,012,879.68	\$4,848,001.90	+\$1,164,877.78
TOTAL DEFERRED ASSETS .....	\$414,059.72	\$398,772.32	+\$15,287.40	DEFERRED LIABILITIES:			
UNADJUSTED DEBITS:				Other Deferred Liabilities .....	\$269,869.72	\$263,706.89	+\$6,162.83
Rents and Insurance Premiums Paid in Advance .....	\$25,036.15	\$23,435.02	+\$1,601.13	UNADJUSTED CREDITS:			
Other Unadjusted Debits	199,693.10	219,384.84	-19,691.74	Tax Liability .....	\$767,320.16	\$1,128,659.18	-\$361,339.02
TOTAL UNADJUSTED DEBITS .....	\$224,729.25	\$242,819.86	-\$18,090.61	Accrued Depreciation—Road .....	136,649.49	136,649.49	.....
TOTAL .....	\$272,216,192.29	\$273,824,715.59	-\$1,608,523.30	Accrued Depreciation—Equipment .....	12,221,505.91	11,810,546.77	+410,959.14

The following Assets not included in Balance Sheet Accounts:			
Securities Issued or Assumed—Unpledged:			
Preferred Stock, Series "A" ....	\$5,528,364.39	\$5,528,364.39	.....
Common Stock ...	15,730,515.52	15,730,515.52	.....
Long Term Debt ..	11,392,905.46	11,392,905.46	.....
Securities Issued or Assumed—Pledged:			
Long Term Debt ..	17,547,000.00	17,545,000.00	+\$2,000.00
Long Term Debt Held for Exchange of Underlying Securities, per contra ...	31,095,000.00	31,097,000.00	-2,000.00

Intercorporate Assets and Liabilities are excluded.  
There were 808,938.9429 shares Common Stock outstanding in hands of the public December 31, 1933.

There were also 203,0673 shares included in Stock Liability for Conversion on December 31, 1933.

The Company is guarantor, jointly with other Companies, of the securities of certain terminal companies, none of which is in default.  
Dividends on 7% Cumulative Preferred Stock, Series "A," have not been declared or paid in respect to the period subsequent to September 30, 1931.

No provision is made in the above balance sheet for proposed additional assessments in respect to prior years' Federal Income Taxes, also Kansas State Taxes, liability for which is not admitted by the Company.

The Company's program for retirement of equipment will result in a charge to Profit and Loss in 1934 of approximately \$5,500,000.

[Advertisement]

The following Liabilities not included in Balance Sheet Accounts:			
Securities held by or for the Company—Unpledged:			
Preferred Stock, Series "A" ....	\$5,528,364.39	\$5,528,364.39	.....
Common Stock ...	15,730,515.52	15,730,515.52	.....
Long Term Debt ..	11,392,905.46	11,392,905.46	.....
Securities held by or for the Company—Pledged:			
Long Term Debt ..	17,547,000.00	17,545,000.00	+\$2,000.00
Liability to holders of underlying Long Term Debt in exchange for which securities are held, per contra .....	31,095,000.00	31,097,000.00	-2,000.00

Five notes amounting to \$51,684.01 were paid during the year. Interest on Adjustment Mortgage Bonds outstanding in hands of the public, due April 1 and October 1, 1933, was declared by the Board of Directors as due and payable.

#### Operation

Total operating revenues during 1933 were \$1,543,152 less than in 1932, or 5.67 per cent. Operating expenses during 1933 were \$229,701 less than in 1932 or 1.19 per cent.

The depressed condition of business generally continued throughout 1933.

The movement of farm products was seriously curtailed by continuing unfavorable market conditions, affecting especially live stock and perishables, and by crop shortages throughout our territory. Extreme drought conditions in our richest wheat areas in northwest Oklahoma resulted in almost complete failure of that crop. Effective October 12, 1933, the Federal government established a national policy of loans to cotton growers, which had the effect of holding cotton in storage for more favorable prices; this together with the policy of acreage reduction, established by the Federal government, resulted in a curtailment in the movement of cotton to our Texas Gulf ports.

Pipe line competition and the unsettled condition of the petroleum industry, which prevailed throughout the year, resulted in a reduction in our oil tonnage.

While truck competition in the movement of practically all commodities was severe, definite progress was made in meeting this condition more effectively. We have regained some of the traffic previously lost to the trucks.

In 1933 the revenue from passengers carried was less than in 1932 by \$445,976, or 19.55 per cent.

Train operation, both freight and passenger, was satisfactorily

maintained during the year. The property is being maintained in good physical condition to meet all requirements of the service.

#### Additions and Betterments

The more important road improvements completed during the year were:

New warehouses for accommodation of industries at Kansas City, Oklahoma City, Tulsa, Waco, and Houston.

Relaying 17 miles of main line with new 90-pound rail, replacing 90-pound rail, and 7.5 miles of 90-pound relay rail, replacing 85-pound and 90-pound rail.

Separation of grades at three crossings of streets and highways, one of which was constructed by the State at no expense to the Railroad Company.

Investment in road property increased \$215,474 during the year. Expenditures for new equipment, including four new lounge cars, amounted to \$246,452 and expenditures for improvement to existing equipment amounted to \$107,535. The amount of equipment retirements for the year, less replacements, was \$1,610,944. There was a net decrease in value of equipment owned amounting to \$1,256,957.

#### Industrial Development

During the year, 190 new industries and industrial expansions, representing an investment of approximately \$6,400,000, were established along rails of this company. While the number of new industries represents an increase of approximately 20 per cent as compared with 1932, the amount of investment increased nearly 250 per cent.

M. H. CAHILL,  
President.

## Southern Pacific Company — Annual Report

### REPORT OF THE BOARD OF DIRECTORS

NEW YORK, N. Y., May 3, 1934

TO THE STOCKHOLDERS OF THE SOUTHERN PACIFIC COMPANY:

Your Board of Directors submits this report of the operations and financial affairs of the Southern Pacific Lines and Affiliated Companies for the year ended December 31, 1933.

#### Income Account

The following statements of income and of surplus show the net deficit for the year and the accumulated surplus to the close of the year, accruing to Southern Pacific Company stock from the Transportation System and from all separately operated *Solely Controlled Affiliated Companies*, combined:

NET DEFICIT OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, FOR THE YEAR 1933, COMPARED WITH THE YEAR 1932

	Year Ended December 31, 1933	+Increased Deficit -Decreased Deficit Compared with 1932 Amount Per Cent
Net deficit of Transportation System	\$4,990,931.10	-788,700.03 13.65
Net deficit of Affiliated Companies..	\$4,319,286.18	+628,916.18 17.04
Net deficit of Transportation System and of all separately operated <i>Solely Controlled Affiliated Companies</i> , combined..	\$9,310,217.28	-\$159,783.85 1.69

\* The amounts reported against items 1, 2, and 3, exclude all inter-company dividends.

SURPLUS OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, TO DECEMBER 31, 1933

	Debit	Credit
Total corporate surplus at December 31, 1932		\$522,407,835.21
Corporate deficit, at date of acquisition, of properties acquired during the year	\$666,112.92	
Net deficit during the year	9,310,217.28	
Miscellaneous adjustments during the year	29,417,093.32	
Credit balance December 31, 1933.....	483,014,411.69	
	\$522,407,835.21	\$522,407,835.21

#### Income Account of Southern Pacific Lines

The income account of the Transportation System (Southern Pacific Company and Transportation System Companies, combined, excluding offsetting accounts and inter-company dividends) for the year 1933, compared with the year 1932, was as follows:

	Year Ended December 31, 1933	+Increase -Decrease	Per Cent
OPERATING INCOME			
Railway operating revenues....	\$129,860,961.72	-\$12,736,178.38	8.93
Railway operating expenses....	102,374,150.88	-12,828,810.49	11.14
Net revenue from railway operations .....	\$27,486,810.84	+\$92,632.11	.34
Railway tax accruals.....	12,435,776.12	-2,332,637.16	15.79
Uncollectible railway revenues.	146,100.77	+90,141.73	161.09
Equipment rents—Net .....	5,585,412.44	-999,533.21	15.18
Joint facility rents—Net.....	262,447.92	-116,256.03	30.70
Net railway operating income	\$9,057,073.59	+\$3,450,916.78	61.56
Revenues from miscellaneous operations .....	\$425,561.24	-\$68,083.87	13.79
Expenses of miscellaneous operations .....	416,556.38	-79,439.84	16.02
Net revenue from miscellaneous operations .....	\$9,004.86	+\$11,355.97	....
Total operating income.....	\$9,066,078.45	+\$3,462,272.75	61.78
NONOPERATING INCOME			
Income from lease of road....	\$100,907.96	+\$3,043.74	3.11
Miscellaneous rent income .....	1,452,782.35	-96,972.85	6.26
Miscellaneous nonoperating physical property .....	39,769.61	+13,405.25	50.85
Separately operated properties—Profit .....	4,178.07	-2,743.02	39.63
Dividend income .....	†13,045,394.31	-1,528,450.55	10.49
Income from funded securities—Bonds and notes .....	2,972,455.71	-95,384.08	3.11
Income from funded securities—Investment advances .....	69,831.80	-10,519.88	13.09
Income from unfunded securities and accounts .....	224,346.01	-491,834.95	68.67
Income from sinking and other reserve funds .....	358,348.97	+22,669.68	6.75
Miscellaneous income .....	121,893.96	-59,258.75	32.71
Total nonoperating income...	\$18,389,908.75	-\$2,246,045.41	10.88
Gross income .....	\$27,455,987.20	+\$1,216,227.34	4.64
DEDUCTIONS FROM GROSS INCOME			
Rent for leased roads.....	\$74,698.25	+\$129.06	.17
Miscellaneous rents .....	806,049.42	+29,839.96	3.84
Miscellaneous tax accruals....	38,419.16	-11,716.46	23.37
Separately operated properties—Loss .....	95,239.97	-16,963.15	15.12
Interest on funded debt—Bonds and notes .....	29,516,167.66	-192,182.96	.65
Interest on funded debt—Non negotiable debt to affiliated companies .....	313.82	+76.12	32.02
Interest on unfunded debt....	904,529.78	+406,079.53	81.47
Amortization of discount on funded debt .....	386,692.34	-4,554.25	1.16
Maintenance of investment organization .....	24,623.36	-2,588.55	9.51
Miscellaneous income charges...	600,184.54	+219,408.01	57.62

† Item 17 excludes all inter-company dividends.

[Advertisement]



	Year Ended December 31, 1933	+Increase -Decrease	Per Cent
Total deductions from gross income .....	\$32,446,918.30	+\$427,527.31	1.34
Net deficit .....	\$4,990,931.10	-\$788,700.03	13.65
DISPOSITION OF NET INCOME			
Income applied to sinking and other reserve funds .....	\$806,050.40	+\$26,113.14	3.35
Income appropriated for investment in physical property .....	*4,474.17	-21,780.68	....
Total appropriations .....	\$801,576.23	+\$4,332.46	.54
Income balance transferred to debit of profit and loss....	\$5,792,507.33	-\$784,367.57	11.93

\* Credit.

## Transportation Operation—Southern Pacific Lines

The following table shows the Net Railway Operating Income and Traffic Statistics of the Transportation System for the year 1933, compared with those for the year 1932:

	Year Ended December 31, 1933	+Increase -Decrease	Per Cent
Average miles of road operated .....	13,555.39	-157.99	1.15
NET RAILWAY OPERATING INCOME			
RAILWAY OPERATING REVENUES			
Freight .....	\$99,033,168.00	-\$6,964,776.21	6.57
Passenger .....	17,713,646.46	-4,186,833.40	19.12
Mail and express .....	7,236,144.17	-761,234.10	9.52
All other transportation .....	3,498,314.39	-92,129.83	2.57
Incidental .....	2,895,813.29	-820,027.84	22.07
Joint facility—Credit .....	129,731.45	-4,047.12	3.03
Joint facility—Debit .....	645,856.04	+92,870.12	12.57
Total railway operating revenues .....	\$129,860,961.72	-\$12,736,178.38	8.93
RAILWAY OPERATING EXPENSES			
Maintenance of way and structures .....	\$13,617,584.80	-\$3,299,080.92	19.50
Maintenance of equipment .....	24,463,619.64	-2,006,996.85	7.58
Total maintenance .....	\$38,081,204.44	-\$5,306,077.77	12.23
Traffic .....	4,659,899.95	-513,092.18	9.92
Transportation .....	48,610,036.32	-6,078,844.39	11.12
Miscellaneous operations .....	2,188,924.28	-399,429.59	15.43
General .....	9,037,545.14	-545,413.12	5.69
Transportation for investment—Credit .....	203,459.25	+14,046.56	6.46
Total railway operating expenses .....	\$102,374,150.88	-\$12,828,810.49	11.14
Net revenue from railway operations .....	\$27,486,810.84	+\$92,632.11	.34
Railway tax accruals .....	\$12,435,776.12	-\$2,332,637.16	15.79
Uncollectible railway revenues .....	146,100.77	+90,141.73	161.09
Railway operating income .....	\$14,904,933.95	+\$2,235,127.54	18.58
Equipment rents—Net .....	5,585,412.44	-999,533.21	15.18
Joint facility rents—Net .....	262,447.92	-116,256.03	30.70
Net railway operating income .....	\$9,057,073.59	+\$3,450,916.78	61.56
TRAFFIC STATISTICS			
(STEAM RAIL LINES)			
FREIGHT TRAFFIC			
Freight service train-miles....	16,776,701	-1,076,333	6.03
Tons carried—revenue freight .....	26,194,085	-628,164	2.34
Ton-miles—revenue freight .....	8,252,132,463	+72,020,076	.88
Loaded cars per train .....	27.58	+1.00	3.76
Net tons per train—all freight .....	545.33	+33.83	6.61
Revenue per ton-mile—revenue freight .....	1.154 cents	-.094 cents	7.53
Average distance carried—revenue freight (miles) .....	315.04	+10.07	3.30
PASSENGER TRAFFIC			
Passenger service train-miles .....	15,557,478	-2,515,876	13.92
Passengers carried—revenue .....	7,920,862	-430,328	5.15
Passenger-miles—revenue .....	894,840,501	-126,401,328	12.38
Passengers per train—revenue .....	54.30	+6.1	1.14
Passenger revenue per passenger-mile .....	1.816 cents	-.160 cents	8.10
Average distance carried—revenue passengers (miles) .....	112.97	-9.32	7.62

Total railway operating revenues for 1933 amounted to \$129,860,961.72, and were \$12,736,178.38, or 8.93 per cent less than for 1932.

The decline in traffic volume and revenues of Southern Pacific Lines, experienced for several years, continued during the first three months of 1933, with losses in April and May somewhat diminished. For the last seven months, however, the total volume of revenue freight and passenger traffic carried by your Lines, and revenues therefrom, were larger than for the same period of 1932. Revenues for this period, however, did not increase in the same proportion as traffic handled, due to reductions in transcontinental rates on perishable fruits and vegetables,

effective in May and June, 1933, and other reductions in freight rates and in passenger fares, initiated by the railroads to meet the intense competition of other means of transportation.

More than offsetting the decrease in operating revenues for the year were the reduction of \$12,828,810.49, or 11.14 per cent, in operating expenses; the decrease of \$2,332,637.16, or 15.79 per cent, in taxes; and the decreases in equipment and joint facility rents and other charges amounting to \$1,025,647.51, or 14.61 per cent; with the result that net railway operating income increased \$3,450,916.78, or 61.56 per cent compared with 1932.

Freight revenues decreased \$6,964,776.21, or 6.57 per cent. Volume of revenue freight carried by your Company's steam rail lines increased 72,020,076 ton-miles, or .88 per cent; but, principally due to the reductions made in rates for the purpose of stimulating rail shipments, freight revenues of such lines decreased 6.68 per cent, and the average revenue received per ton-mile, therefore, decreased .094 cent, or 7.53 per cent. If the same revenue per ton-mile had been received as for the previous year the rail lines' freight revenues would have shown an increase of approximately \$936,000 instead of a decrease of \$6,813,000.

Crops of agricultural products were generally smaller than in 1932 but were more than sufficient to meet market demands. The decrease in revenues from this group of commodities was principally due to reduced revenues from grain, fresh fruits, and vegetables. The decrease in grain revenues resulted from light movement to Gulf ports for export, smaller movement of wheat into California from Utah and Idaho points due to more attractive markets in the east, and reductions in local rates in California to meet motor truck competition. Revenues from fruits and vegetables declined mainly because of the greatly lessened market demand in the early months of the year, and due to the effect of rate reductions. Revenues from cotton and cotton products increased substantially, largely due to recovery of traffic from motor trucks made possible by reductions in rail rates, and there were small increases in some other agricultural commodities.

The decrease in revenues from animals and products resulted from unfavorable market conditions and diversion of short haul livestock shipments to motor trucks.

Revenues from products of mines were smaller principally as the result of reduced movement of coal, and materials used for highway and other construction work; the decreases in revenues from these commodities being partially offset by increased revenues from sulphur, borax, and miscellaneous mining products.

The improvement in general business conditions during the latter part of the year was reflected particularly in the increased revenues from forest products, and manufactures and miscellaneous commodities.

Passenger revenues decreased \$4,186,833.40, or 19.12 per cent. Business and pleasure travel was severely affected by depressed business conditions prevailing in the early months of the year.

Competing forms of passenger transportation, particularly buses and privately owned automobiles, having made increasingly serious inroads on rail passenger traffic, experimental reductions in passenger fares were initiated during 1933, in an effort to determine the effect of lower fares on the volume of this traffic and the revenues therefrom. On July 1, 1933, low fares, averaging about two cents a mile, good in day coaches, chair cars, and tourist sleepers, were made effective between all stations on your Company's Lines west of Ogden, Utah; Tucumcari, New Mexico; and El Paso, Texas; and on December 1, 1933, your Company, in conjunction with all other western railroads, reduced the first class basic rail fare from 3.6 cents a mile to 3.0 cents a mile, eliminated the fifty per cent surcharge on Pullman fares, and made the low coach fares applicable to all its Lines. All these reductions were published to expire May 31, 1934. On March 2, 1934, the period of elimination of the Pullman surcharge was extended to December 31, 1934, and on April 6, 1934, the experimental reductions in rail fares mentioned herein were extended until September 30, 1934, by concurrent action of the western railroads.

Operating expenses, as mentioned in a preceding paragraph, decreased \$12,828,810.49, or 11.14 per cent. Strict economies in operations were further sought and exercised; and while the larger volume of traffic handled commencing in June affected expenditures for track maintenance and required reconditioning a number of locomotives and cars which had been stored, the reduction in operating expenses exceeded the decrease in operating revenues.

Railway Tax Accruals decreased \$2,332,637.16 or 15.79 per cent, the result of a decrease of \$1,552,360.29 in the amount of California gross receipts tax, and a decrease of \$780,276.87 in other taxes, principally due to a change in the basis of accruing taxes on operating property within the State of Oregon. The 1933 taxes consumed 45.2 per cent of the net revenue from railway operations, compared with 53.9 per cent in 1932.

Equipment rents paid decreased \$999,533.21 or 15.18 per cent, principally due to the decrease in the number of private line

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refrigerator cars moved during the year, and partially due to the increase in rental receipts for cars interchanged on a per diem rental basis having exceeded the increase in per diem rental payments to other railroads.

The reductions in salaries and wages of officers and employees, mentioned in last year's report, were continued through the year without change and are effective at this time, the period of the ten per cent reduction in wages of organized employees covered by local or national agreements having been extended to and including June 30, 1934. Negotiations with representatives of the organized employees, seeking agreement with respect to wage rates subsequent to June 30, 1934, were concluded on April 26, 1934, whereby 2½ per cent of the 10 per cent reduction will be restored on July 1, 1934, a second 2½ per cent on January 1, 1935, and the final 5 per cent on April 1, 1935. By these three steps the rail workers will return to the pay basis of 1931.

#### Capital Stock—Southern Pacific Lines

The increase during the year in capital stocks of Southern Pacific Company and Transportation System Companies held by the public amounted to \$43,900.00 resulting from issue of Southern Pacific Company Common Stock issued in exchange

for Common and Preferred Stocks of the St. Louis Southwestern Railway Company:

#### Funded Debt—Southern Pacific Lines

The increase of \$5,857,210.90 in funded debt of Southern Pacific Lines held by the public is the result principally of \$16,670,000 borrowed from the Reconstruction Finance Corporation less \$10,849,789.10 of funded debt retired during the year consisting largely of Equipment Trust Certificates maturing.

#### Investment in Road and Equipment—Southern Pacific Lines

The decrease during the year in Investment in Road and Equipment of the Transportation System amounted to \$3,222,871.61, due principally to retirement of rolling stock.

#### Air Conditioning Equipment for Passenger Cars

In last year's report mention was made of the air conditioning equipment installed in fourteen dining cars operating in the San Francisco Overland Limited, Golden State Limited, and Sunset Limited trains. In order further to improve your Company's passenger service and especially to provide greater com-

### BALANCE SHEET OF SOUTHERN PACIFIC LINES SOUTHERN PACIFIC COMPANY AND TRANSPORTATION SYSTEM COMPANIES, COMBINED

#### ASSETS—DECEMBER 31, 1933, COMPARED WITH DECEMBER 31, 1932, EXCLUDING OFFSETTING ACCOUNTS

	December 31, 1933	+Increase -Decrease
<b>INVESTMENTS</b>		
Investment in road and equipment....	\$1,499,621,673.48	-\$3,222,871.61
Improvements on leased railway property	303,493.06	-341,493.98
Sinking funds .....	6,815,042.60	+443,938.21
Deposits in lieu of mortgaged property sold	106,488.02	-82,001.86
Miscellaneous physical property.....	3,482,496.66	+361,034.04
Investments in affiliated companies:		
Stocks .....	398,663,754.54	+2,491,951.60
Bonds .....	173,984,895.29	-5,910,008.56
Stocks } Cost inseparable .....	59,216,075.20	-457,970.32
Bonds } .....		
Stocks } Cost inseparable .....	2,249,825.00	.....
Bonds } .....		
Advances .....	24,230,489.19	-15,256.97
Notes .....	60,709,384.79	+3,026,613.87
Other investments:		
Stocks .....	5,252,956.72	-1,098.00
Bonds .....	4,223,762.25	+69,610.52
Notes .....	513,800.56	+2,558.84
Advances .....	904,626.21	+71,162.98
Miscellaneous .....	1,490,200.45	-49,079.39
<b>Total .....</b>	<b>\$2,241,768,964.02</b>	<b>-\$3,612,910.63</b>
<b>CURRENT ASSETS</b>		
Cash .....	\$21,287,799.90	+\$5,782,387.54
Demand loans and deposits.....	1,305.00	.....
Time drafts and deposits.....	4,100,000.00	+4,100,000.00
Special deposits .....	85,972.69	+42,795.11
Loans and bills receivable.....	1,271,641.78	-261,713.50
Traffic and car-service balances receivable .....	2,909,915.52	+145,917.39
Net balance receivable from agents and conductors .....	1,402,264.60	+169,440.48
Miscellaneous accounts receivable.....	4,163,516.16	+333,315.82
Material and supplies.....	16,208,348.73	-8,855,966.79
Interest and dividends receivable.....	5,152,764.67	+3,938,736.10
Rents receivable .....	30,520.88	+21,502.05
Other current assets .....	160,240.17	-5,580,137.68
<b>Total .....</b>	<b>\$56,774,290.10</b>	<b>-\$163,723.48</b>
<b>DEFERRED ASSETS</b>		
Working fund advances.....	\$69,058.86	-\$8,205.01
Insurance and other funds.....	57,310.00	.....
Other deferred assets .....	2,157,380.09	-322,694.06
<b>Total .....</b>	<b>\$2,283,748.95</b>	<b>-\$330,899.07</b>
<b>UNADJUSTED DEBITS</b>		
Rents and insurance premiums paid in advance .....	\$224,685.30	-\$38,435.31
Discount on capital stock.....	5,959,083.45	.....
Discount on funded debt.....	12,607,669.76	-386,692.34
Other unadjusted debits.....	11,098,912.77	+3,193,407.17
Securities issued or assumed—Unpledged (a) .....	7,731,375.00	-3,342,000.00
Securities issued or assumed—Pledged (a) .....	2,367,000.00	+2,268,000.00
<b>Total .....</b>	<b>\$29,890,351.28</b>	<b>+\$2,768,279.52</b>
<b>Grand total .....</b>	<b>\$2,330,717,354.35</b>	<b>-\$1,339,253.66</b>

(a) Excluded from total assets, and corresponding amounts are excluded from outstanding funded debt, in accordance with regulations of the Interstate Commerce Commission.

#### LIABILITIES—DECEMBER 31, 1933, COMPARED WITH DECEMBER 31, 1932, EXCLUDING OFFSETTING ACCOUNTS

	December 31, 1933	+Increase -Decrease
<b>CAPITAL STOCK</b>		
Held by the public.....	\$377,292,708.86	+\$43,900.00
Held within the system.....	383,471,816.78	.....
<b>Total stock .....</b>	<b>\$760,764,525.64</b>	<b>+\$43,900.00</b>
Premium on capital stock of Southern Pacific Company .....	\$6,304,845.00	.....
<b>Total .....</b>	<b>\$767,069,370.64</b>	<b>+\$43,900.00</b>
<b>GOVERNMENTAL GRANTS</b>		
Grants in aid of construction.....	\$997,317.48	+\$177,085.08
<b>LONG TERM DEBT</b>		
Funded debt unmatured:		
Held by the public.....	\$677,173,227.33	+\$5,857,210.90
Held within the system.....	154,560,357.90	+4,292,000.00
<b>Total funded debt.....</b>	<b>\$831,733,585.23</b>	<b>+\$10,149,210.90</b>
Nonnegotiable debt to affiliated companies:		
Open accounts .....	14,424,806.75	-10,387,259.32
<b>Total .....</b>	<b>\$846,158,391.98</b>	<b>-\$238,048.42</b>
<b>CURRENT LIABILITIES</b>		
Loans and bills payable.....	\$21,500,000.00	+\$14,497,950.00
Traffic and car-service balances payable .....	2,718,689.67	+333,078.27
Audited accounts and wages payable.....	6,901,990.62	+378,877.82
Miscellaneous accounts payable.....	2,956,162.12	-2,403,828.48
Interest matured unpaid .....	277,036.17	+29,727.50
Interest payable January 1st.....	3,412,090.00	-18,050.00
Dividends matured unpaid .....	8,214.50	-609.50
Funded debt matured unpaid.....	61,550.00	+16,000.00
Unmatured interest accrued .....	6,035,600.11	-48,774.99
Unmatured rents accrued .....	124,109.41	-26,026.01
Other current liabilities .....	354,486.90	+148,211.63
<b>Total .....</b>	<b>\$44,349,929.50</b>	<b>+\$12,906,556.24</b>
<b>DEFERRED LIABILITIES</b>		
Liability for provident funds.....	\$464,761.14	-\$1,910.84
Other deferred liabilities .....	582,293.01	+98,365.82
<b>Total .....</b>	<b>\$1,047,054.15</b>	<b>+\$96,454.98</b>
<b>UNADJUSTED CREDITS</b>		
Tax liability .....	\$2,696,818.50	-\$1,832,134.53
Insurance and casualty reserves.....	2,474,876.13	-237,398.07
Accrued depreciation—Road .....	3,629,934.72	-59,556.70
Accrued depreciation—Equipment .....	137,545,579.57	+7,786,337.89
Other unadjusted credits .....	38,160,920.66	+1,801,305.57
<b>Total .....</b>	<b>\$184,508,129.58</b>	<b>+\$7,458,554.16</b>
<b>CORPORATE SURPLUS</b>		
Additions to property through income and surplus .....	\$11,057,893.12	+\$162,489.67
Funded debt retired through income and surplus .....	12,456,679.80	+260,172.25
Sinking fund reserves .....	9,067,014.03	+544,422.59
Appropriated surplus not specifically invested .....	3,818,177.83	.....
<b>Total appropriated surplus.....</b>	<b>\$36,399,764.78</b>	<b>+\$967,084.51</b>
Profit and loss—Balance .....	450,187,396.24	-\$22,750,840.21
<b>Total corporate surplus .....</b>	<b>\$486,587,161.02</b>	<b>-\$21,783,755.70</b>
<b>Grand total .....</b>	<b>\$2,330,717,354.35</b>	<b>-\$1,339,253.66</b>

[Advertisement]



fort for passengers during summer months, arrangements have been made to install air conditioning equipment in the club cars or lounge cars, room sleeping cars, and room-observation cars, operating in these trains; in the room sleeping cars, dining cars, and observation cars, operating in the Cascade; and in the parlor cars operating in the Sunbeam trains.

#### *Automobile Cars Equipped with Loading Devices*

After test installation in 10 automobile cars in the preceding year, 140 of your Company's automobile cars were equipped during 1933, and an additional 500 cars are being equipped in 1934, with a type of mechanical loading device which does not unfit the cars for other lading; and which avoids the use of wooden timbers and blocks nailed to the sides and floors of the cars to brace and support automobiles in transit, with resultant saving to shippers and consignees of time and cost of loading and unloading automobiles, and reduction in your Company's cost of maintaining floors and lining of such cars. Cars equipped with this device are in demand for automobile loading, and in addition to facilitating the handling of increased automobile shipments, have enabled your Company to secure some of this traffic which had been moving via water routes or highways.

#### *St. Louis Southwestern Railway Company*

During the period from January 1, 1933, to May 4, 1933, date on which privilege to exchange was withdrawn, your Company issued 439 shares of its common stock in exchange for 590 shares of preferred stock and 250 shares of common stock of the St. Louis Southwestern Railway Company. With the shares thus acquired, your Company, on December 31, 1933, owned an aggregate of 323,968 shares, or 87.37 per cent, of the 370,797 shares of outstanding preferred and common stocks of the St. Louis Southwestern Railway Company.

#### *Pacific Greyhound Corporation and Southwestern Greyhound Lines, Inc.*

As stated in previous reports, Pacific Greyhound Corporation, through its subsidiaries, is the major operator of motor bus lines on the Pacific Coast south of Portland, Oregon, and west of Salt Lake City, Utah, and El Paso, Texas. On December 31, 1933, your Company owned 36.09 per cent of the outstanding capital stock of the Pacific Greyhound Corporation.

During the year operations extended over an average of 7,599 route miles, motor coaches made a total of 18,692,559 miles and carried 3,097,898 passengers. Gross revenues amounted to \$4,475,484.10, operating expenses were \$2,879,163.64, taxes \$450,303.28 and depreciation \$632,008.11, leaving a net operating profit of \$514,009.07. Net income after all charges, amounted to \$515,288.41, an increase of \$102,328.10, or 24.78 per cent, over last year.

#### *Merger of Southern Pacific Lines in Texas and Louisiana*

On January 10, 1934, the Interstate Commerce Commission authorized the merger of the properties of the fourteen companies comprising Southern Pacific Lines in Texas and Louisiana into the single corporation, Texas and New Orleans Railroad Company; the issue by the latter Company of \$59,646,400 additional common stock to be exchanged for the capital stock of the other companies; and the assumption of the funded and unfunded indebtedness, liabilities, and contractual obligations of such other companies. Such authority was granted upon condition that the Texas and New Orleans Railroad Company agree

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to acquire the properties of the Fredericksburg & Northern Railway Company, if the Commission should so order in a subsequent proceeding, at their commercial value. This condition has been accepted.

#### *Mississippi River Bridge*

Construction of the railroad and highway bridge over the Mississippi River at New Orleans by the State of Louisiana and the City of New Orleans jointly, is expected to be completed during the year 1935. The construction by your Company of a freight terminal at Avondale is expected to be completed by the time the bridge is opened for operation, which will permit your Company to move its trains and cars across the bridge and abandon operation of its train ferries at New Orleans and its train yard operations at Algiers.

#### *General Traffic Conditions*

##### *General Conditions*

At the beginning of the year business was at an extremely low level, conditions becoming increasingly acute until nationwide emergency banking holidays were ordered by Proclamation of the President of the United States, effective March 6, 1933. Improvement in business conditions commenced when most of the banks were reopened on March 13, 1933, under licenses issued by the Secretary of the Treasury, and has continued since that time. There is a more favorable outlook for increased traffic in 1934.

##### *Motor Truck Competition*

During 1933, legislation was enacted in Oregon providing for increased regulation of motor truck common carriers and contract carriers, and in Nevada the regulatory law was clarified by legislative action. The California Legislature did not adopt proposed changes in the existing system of regulation which, with respect to motor truck operations, applies only to common carrier operations over regular routes and between fixed termini. The California Legislature, however, imposed a tax of three per cent on gross receipts of for hire motor trucking operations. In Texas, enforcement of motor carrier laws enacted in 1931 has resulted in a substantial reduction of motor trucks for hire and is preventing the establishment of new motor trucking routes that are economically unnecessary.

Due to the lack of regulation of interstate motor truck operations and, in many states, inadequate regulation of intrastate motor truck operations, the majority of competitive trucking service is free from regulation and this condition is responsible for the diversion from the railroads to the highways of a large volume of high grade, short haul, and medium long haul freight traffic, and some long haul traffic.

Your Company has sought and availed itself of every practicable method of meeting motor truck competition, including judicious reduction of carload and less-than-carload freight rates on many commodities. Greatly expedited rail freight service has been provided and operations of your Company's solely controlled motor transport and trucking companies have been extended. By these means the diversion of traffic from the rails has been reduced, and a substantial volume of traffic has been recovered from competing motor truck carriers.

By order of the Board of Directors,  
HALE HOLDEN,

Chairman.

## **[News (Railway Officers)]**

(Continued from page 711)

& Santa Fe, with headquarters at Chicago, died on May 3 in the St. Joseph hospital at Hot Springs, Ark. Mr. McCabe had been connected with the Santa Fe continuously for 47 years. He was born on November 20, 1873, at Washington, D. C., and entered the service of the Santa Fe in 1887 as an office boy in the auditing department. He served in various clerical capacities in the refrigerator and general freight traffic departments until 1913 when he was made chief clerk in the general freight office at Chicago. Mr. McCabe continued to make his headquarters at Chicago until his death. In March, 1920, he

was further advanced to assistant general freight agent and two years later he was made general freight agent, which position he held until his appointment as assistant freight traffic manager in 1927.

**J. L. Cureton**, traffic manager of the Piedmont & Northern and the Durham & Southern, with headquarters at Greenville, S. C., died on April 22.

**John H. Weaver**, chairman of the board of the Cambria & Indiana, with headquarters at Philadelphia, Pa., died in that city on April 26.

**Wesley H. Hudgens**, who retired three years ago as chief claim agent for the St. Louis-San Francisco, with headquarters at Springfield, Mo., died at his home near Springdale, Ark., on May 2.

**J. R. Sexton**, who retired in 1930 as mechanical superintendent on the Western Lines of the Atchison, Topeka & Santa Fe at La Junta, Colo., died suddenly on May 4.

**Arthur Knapp**, inspection engineer of rails, wheels and structural steel for the New York Central, with headquarters in New York, died suddenly in that city on May 3 while waiting to board a train for Pittsburgh. Mr. Knapp was 50 years old.

**Edward P. Skene**, who retired from railroad service in 1911 as land commissioner of the Illinois Central to become connected with the Interstate Commerce Commission, died on May 3 at his home in Chicago. He had retired from the service of the I. C. C. in 1924.

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**By JOHN WILL CHAPMAN, B.S., M.C.S.**

*Member of Investment Staff, United States Trust Company of New York; Formerly Statistical and Security Analyst for Standard Statistics Company*

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